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ABSTRACT

The first part of this report descriptively compares black and white students with respect to various outcomes such as effort, academic performance, aspiration, and racial opinion change, and examines whether students of given racial groups differ in behavior depending on the school which they attend. Interrelationships between the various outcomes are explored. Data indicate that blacks do not differ greatly from whites with respect to academic effort or absence from school, that blacks and whites are similar with respect to educational and occupational aspirations, and that they differ greatly in achievement scores and grades. The second part of the report considers the associations between each of the outcomes in the school and each of several sets of factors which are seen to account for variations in each outcome. These sets of possible explanatory factors are interracial interaction, student characteristics, home background, school situation, and student goals, beliefs ano interests. Analysis of the data deals with each racial group separately and emphasizes the differences among individual students. Since the data on which the report is based is four years old, the descriptive findings are not held to necessarily reflect the current situation. Yet the observed general patterns and the issues they raise are still relevant. (Author/AM)

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THE RELATION OF INTER-RACIAL CONTACT AND OTHER FACTORS TO OUTCOMES IN THE PUBLIC HIGH SCHOOLS OF INDIANAPOLIS

A Study of Patterns and Possible Determinants of Effort, Academic Performance, Aspirations, and Racial Opinion Change

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EDUCATION

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PREFACE

This is the second of two reports. The first dealt with the patterns and determinants of interracial interaction in the Indianapolis public high schools (Patchen and Davidson, with Hofmann and Brown, 1973).

In the present report, we address the question: What effects, if any, do varying types of interracial experiences have on the performance, aspirations, and racial opinions of students? At the same time, we consider the relationships between these outcomes and a variety of factors other than interracial experiences (e.g., other aspects of the school situation, family background).

In the first part of the report, we compare black students and white students descriptively with respect to various outcomes (academic performance, etc.). However, in trying to understand the determinants of these outcomes, the focus of our interest is not on the role that race plays (for whatever reasons), relative to other factors. Rather, we are interested in the factors which account for variations in academic performance, aspirations, and opinion change within each racial group. Therefore, our analysis deals with each racial group separately.

In examining the possible determinants of performance, aspirations, and opinion change, our emphasis in much of this report is on differences among individual students. Other documents stemming from this project will try to explain the variations among schools with respect to these outcomes. (See Davidson, Patchen, Brown and Hofmann, 1975).

Since the data on which this report is based were gathered four years ago, the descriptive findings of section 2 do not necessarily reflect the current situation. However, many of the general patterns which were found--e.g., the differences between Blacks and Whites in achievement test performance and their similarity in educational and occupational aspirations--have generally been found in many other studies at different points in time. (See a list of some reviews of the literature in the References section.) Thus, many of the results shown in section 2, and the issues these results raise, undoubtedly are still relevant today.

While differences among students in particular schools are subject to change over time (as schools and their student bodies change), the relationships between an outcome (e.g., achievement test scores) and possible determinants of that outcome (e.g., parents' education, interracial contact in class) may be expected to be relatively stable over time. Thus, our findings concerning those factors which were related to academic performance, aspirations, and opinion change may generally be expected to continue to hold true. We hope that these findings will be useful not only for understanding some of the reasons for variations in school outcomes, but also in providing directions for policies that will improve these outcomes. We make a few policy suggestions in the summary sections. We urge others--especially those with policy responsibilities--also to give further thought about the implications for these findings for school and community educational policy.

Finally, a few words about the contributions of each of the researchers to this report: The study was initially planned by Patchen and Davidson, who were the principal investigators. The detailed planning of the study and the design of the data-gathering instruments were the joint work of Patchen, Davidson, and Hofmann, with substantial participation by Brown. Field work was done by all four researchers. Processing of the data used in this report and supervision of computer operations were primarily the responsibility of Hofmann and Patchen. Outline for the analyses used in this report was done by Patchen, with the help of suggestions from Davidson and Hofmann. This report was written by Patchen, with the aid of helpful comments on an earlier draft by the other researchers.

1. INFORMATION ABOUT THE STUDY

Purposes

The purpose of our study was to learn about 1) the types of relationships which exist between black students and white students in the Indianapolis public high schools; 2) the possible determinants of friendly and of unfriendly relationships between the races; and 3) the possible effects of different kinds of interracial experiences on the academic performance, aspirations, and racial opinion change of students. Information concerning the first two topics is contained in a previous report and in several papers and two doctoral dissertations (see References). The present report concerns the third major topic--i.e., the relationship between interracial interaction and academic performance, aspirations, and racial opinion change. It also provides a descriptive picture of the differences between races and among schools in these latter outcomes. Additional papers concerning the effects of interracial interaction on various academic and non-academic outcomes also will be forthcoming.

Study Design and Methods

A description of our research methods, as well as a description of the schools in which the research was done, has been presented in our earlier report (Patchen and Davidson, with Hofmann and Brown, 1973) and will not be repeated in detail here. The earlier report also presents copies of the questionnaires which were used to obtain information from students. Following is a brief description of how the study was done:

Schools. The study was conducted in all of the public high schools in Indianapolis, Indiana. Data were collected during the 1970-71 school year at eleven schools. Since the freshman class of one school was located on a separate campus, there were twelve school sites.

The racial composition of these school sites was as follows:

School	Percent Black
1	1
2	9
3	14
4	14
5	27
6	35
7	37
8	37
9	53
10	54
11	71
12	99

Data from Students. Early in the 1970-71 school year, informal interviews were conducted with black students, with white students, with teachers of both races, and with the principal in each school. On the basis of the information obtained from this preliminary work, as well as from previous research, we constructed a two-part student questionnaire concerning a variety of subjects, including interracial interaction and other student experiences and perceptions in school, and students experiences outside of high school. (Data were also collected by questionnaire from teachers and administrators. These data are not used in the present report.)

In each class (Freshman, Sophomore, etc.) of each school, a sample of about 60 black students and 60 white students was selected systematically from enrollment lists. When there were fewer than 60 students of a given race in a given class, all of the students in that category were included in the sample. Questionnaires were administered in the Spring of 1971 to students in group sessions in a large room at each school. Separate forms were given to black students and to white students (identified visually); these forms were essentially identical except that the terms "black" and "white" were transposed to fit the appropriate case. The questionnaires were administered by the investigators and their assistant(s)--comprising a bi-racial "team"--and students were assured that their answers would be completely confidential.

Of the total number of black students selected in the sample, 75.1 percent (N=1,986) acceptably completed Part I of the questionnaire, 74.4 percent (N-1,969) acceptably completed Part II, and 66.9 percent (N=1,769) acceptably completed both parts. Among white students, the comparable rates and numbers for acceptable completion are: Part I, 82.8 percent (N=2,347); Part II, 80.9 (N=2,292); both parts, 75.7 percent (N=2,146).

Information about the types of data obtained from students, and their combination into indices, is given in the text of this report, where relevant, and in Appendix B.

Data from Records. Information concerning scores on standardized achievement tests (taken in the Sophomore year), were copied from each student's school records. Scores on IQ tests taken by students in grade school also were copied from students' records.

Students' grades and number of absences from school (along with other data) were recorded on computer tapes by the school system. Copies of these tapes were made available to us. Cumulative grade averages had already been computed by the schools and were available on the tapes. On the basis of the data provided on the tapes, we computed also for each student his grade average and his number of absences during the semester in which our data were collected (Spring 1971).

These data, from students and from students records, are used in this report to examine how some important outcomes (academic performance, aspirations, and racial opinion change) differ between the races and among schools and how they are related to each of the following: 1) amount and nature of interracial contact; 2) home background; 3) personal characteristics of students; 4) the school situation; and 5) students' interests, expectations, and goals.

2. OUTCOMES IN SCHOOL: A DESCRIPTION OF EFFORT, PERFORMANCE, ASPIRATIONS, AND OPINION CHANGE

In this section, we will present data on a number of important outcomes whose relationship to inter-racial contact, as well as to other factors, we wish to assess in later sections. These outcomes are: a) the effort which students put into their school work; b) their academic performance (grades and achievement test scores); c) their aspirations for further education and occupations; and d) changes in opinion toward people of another race. In addition to presenting overall comparisons between black and white students, we will examine the extent of differences between the races in each school. We will see also whether students of given racial groups differ in behavior depending on the school which they attend. Finally, we will see what relationships exist among the various outcomes--i.e., among effort, achievement, aspirations, and opinion change.

Effort Toward Academic Goals

For each student, a net score of effort toward academic goals was computed. This score was derived from A) an estimate of the amount of time he spent on homework during the semester, based on his own report of the average amount of time spent doing homework each day; minus B) an estimate of the time he lost from, or directed away from, academic work during the semester as a result of 1) being absent from school; 2) being late to class; 3) missing a class without permission; 4) not getting all his homework done; and 5) being told (by a teacher) to come for a conference "because (he) supposedly did something wrong". Information about the frequency of each of these events during the then-current semester was obtained from each student.

Table 2-1 shows the average scores on the academic effort index, by school and by race. These data show that, in most school sites (seven of the eleven which were bi-racial), there was not a statistically significant difference between the academic effort scores of black students and of white students.[1] In three schools--Schools 2, 7, 8--the average academic effort scores of white students were significantly higher than the average score for black students. On the other hand, in School 11, the average score for black students was significantly higher than the average white score. For all schools combined, the average score for Whites is significantly higher, but the average difference between the races is actually quite small. (Small differences are statistically significant with the large samples formed when all schools are combined.) Overall, then, the evidence based on self-reported behavior of students, indicates little difference in most schools in the academic effort of black students as compared to white students.

TABLE 2-1. EFFORT TOWARD ACADEMIC GOALS[a], BY SCHOOL AND BY RACE

School[b] Number	BLACK STUDENTS			WHITE STUDENTS			Significance of race Difference
	N	Mean Score	Stand. Dev.	N	Mean Score	Stand. Dev.	
1	17	+.20	.19	216	+.17	.18	not signif.
2	108	+.06	.31	294	+.17	.19	.001
3	155	+.16	.22	183	+.17	.19	not signif.
4	191	+.17	.19	215	+.18	.20	not signif.
5	184	+.14	.21	203	+.17	.21	not signif.
6	177	+.16	.24	215	+.18	.24	not signif.
7	202	+.13	.22	217	+.18	.21	.05
8	154	+.03	.24	197	+.12	.26	.001
9	230	+.07	.22	223	+.11	.27	not signif.
10	118	+.09	.22	93	+.14	.20	not signif.
11	197	+.18	.24	205	+.13	.20	.05
12	158	+.08	.25	-	-	-	-
All Schools	1891	+.12	.21	2261	+.16	.22	.001

---

[a] Higher mean score indicates greater effort. (Signs of original index scores have been changed for clarity). See text concerning items included in index.

[b] For each race, there are significant differences among the mean scores of students at the different schools ($p < .001$).

For each race taken separately, there are significant differences in the academic effort of students at different schools ($p < .001$). Among black students, scores on the academic effort index were highest for the small group at School 1, at School 11 and at School 4. Effort scores were lowest for black students at School 8.

Differences in average effort scores among schools were smaller for white students than for black students. White students in most schools had approximately equal average scores on the effort index. However, white students at School 9, School 8, and School 11 scored significantly lower in effort than Whites in other schools. It may be noted that, consistent with their low effort, white students at Schools 9 and 8 also scored relatively low in grades and in standardized achievement tests. However, despite their low average effort scores, white students at School 11 scored highest on the performance measures (see section on performance in this chapter). It may be noted that students at mostly-academic School 11 were admitted to that school on the basis of good academic performance.

In addition to the self-reports of students on a variety of effort-related behaviors, we may look also at data on absences taken from school records.[2] The data (Table 2-2) show that absences varied more among schools than between races. Both among black students and among white students, the average number of absences varied fairly widely and significantly across schools. For all schools combined, there also was a significant racial difference in absences, with Blacks being absent slightly more often than were Whites. However, when we compare the two races in each school separately, we find no significant racial difference in eight of eleven bi-racial schools. In two schools (2 and 5), black students were absent significantly more often than white students but Whites at School 7 had significantly more absences than Blacks at that school. (It may be noted that at two schools where Blacks had significantly more absences, Black students generally had to travel greater distances to get to school than did white students.)

Overall, the data based on recorded absences are consistent with those based on our index of academic effort in showing relatively small differences in academically-oriented effort between Blacks and Whites, as compared to differences among students of the same race attending different schools.

Academic Performance

Two types of information relevant to academic performance are available to us. One is students' grades. The other is students' scores on standardized achievement tests.

Grades. We consider grades first. We have, from school records, the grade which each student received in each of his courses during the semester in which our other data were collected (Spring, 1971). Using these data, we computed for each student his average grade during that semester. (We will refer to this average as "current semester grade".) We also have the cumulative grade average of most students during their entire high school career up to, and usually including the "current" (Spring, 1971) semester.[3]

TABLE 2-2 . NUMBER OF ABSENCES DURING "CURRENT" SEMESTER,[a] BY SCHOOL[b] AND BY RACE

	Black Students			White Students			
School	N	Mean Absences	S.D.	N	Mean Absences	S.D.	Significance of Race Differences
1	18	9.5	10.7	211	6.6	7.2	NS
2	128	14.5	15.0	290	11.5	10.4	.05
3	175	6.8	6.4	213	6.3	6.8	NS
4	197	6.2	7.4	223	6.5	8.9	NS
5	170	7.2	7.6	184	4.7	4.5	.001
6	206	10.9	10.5	225	9.3	10.2	NS
7	220	6.9	7.0	223	8.7	9.4	.05
8	189	12.4	11.5	218	13.2	12.5	NS
9	272	15.3	18.5	271	12.7	15.9	NS
10	127	10.6	8.5	99	10.0	8.9	NS
11	213	8.6	15.3	209	7.6	12.1	NS
12	175	11.1	10.3	-	-	-	-
All Schools	2090	10.1	12.1	2366	9.0	10.8	.005

---

[a] Data are for number of days recorded absent from school during the Spring, 1971 semester. Data were obtained from school records.

[b] Mean number of absences for black students, and for white students, varies significantly among schools ($p < .001$ for each set of racial groups); significance of difference between racial groups in each school is shown at right of table.

This cumulative average was computed by the school system and was obtained from school records. As might be expected, cumulative grade averages and current grade averages are fairly highly correlated. (The correlations are .72 for black students and .82 for white students.)

How do the grades of students compare by school and by race? Table 2-3 and Table 2-4 show these comparisons. We may look, first, at the comparison between the average grades of black students and the average grades of white students. With respect to current grades, the average grades of white students were significantly higher than the average grades of black students in every school. This is true also with respect to cumulative grades, with the exception of School 1 where the difference between the cumulative grades of Whites and those of the small number of Blacks at that school was not statistically significant. For all schools combined, the average grades for black students is below C; the average grades for white students is between C and B, though closer to C.

We may also compare the average grades of students who attended different schools. Black students who attended different schools varied significantly in their average grades ($p < .001$). Grade averages (both current and cumulative) among black students were highest at School 10, School 11, and School 1. Black students grades were lowest at School 9, School 5, and School 2.

Grades of white students--both current and cumulative--also differed significantly among schools ($p < .001$). White students grades were highest at School 11, School 10, and School 6. White students grades were lowest at School 9 and School 4.

Achievement Scores. We have the scores obtained by students on a battery of standardized achievement tests given nationally. Most students in our sample took such achievement tests during their Sophomore year of high school. Students who were Seniors or Juniors at the time of our study had taken previously the National Educational Development Tests (NEDT). Students who were Sophomores or Freshmen at the time of our study took the Metropolitan Achievement Tests (the Sophomores during that same year and the Freshmen during the next year). Test scores for students in each of these years were made available to us.

The National Educational Development Tests include five tests: 1) English Usage; 2) Mathematics Usage 3) Social Studies Reading; 4) Natural Sciences Reading; and 5) Word Usage. According to the test manual, "the questions tend not to ask for specific recall of information; instead they probe the student's capability for understanding the kinds of material he might encounter later in his education (NEDT Interpretation Manual, 1969, p. 8). A composite score, which is the average of the five test scores, and which "can be viewed as an index of total educational development" (Manual, p. 3) was computed by the testers. The composite NEDT score for each student is expressed in percentile terms, indicating how well he did in comparison to other students at his grade level throughout the nation. This composite NEDT score provided by the school is the achievement test score which we

TABLE 2-3. CURRENT-SEMESTER GRADES, BY SCHOOL AND BY RACE

School[b] Number	BLACK STUDENTS			WHITE STUDENTS			Significance of race Difference
	N	Mean Grade Aver.[a]	Stand. Dev.	N	Mean Grade Aver.[a]	Stand. Dev.	
1	20	3.9	1.2	240	4.6	1.6	.06
2	143	3.3	1.5	323	4.5	1.6	.001
3	189	3.4	1.5	223	4.3	1.8	.001
4	217	3.5	1.6	236	4.0	1.8	.001
5	189	3.2	1.4	204	4.5	1.6	.001
6	233	3.5	1.6	248	4.9	1.9	.001
7	238	3.7	1.7	249	4.4	2.0	.001
8	184	3.8	1.8	216	4.5	1.8	.001
9	263	3.0	1.8	256	3.8	2.2	.001
10	147	4.5	1.7	109	5.0	1.7	.05
11	227	4.2	1.8	225	5.0	2.0	.001
12	197	3.9	2.0	-	-	-	-
All Schools	2247	3.6	1.7	2529	4.5	1.8	.001

---

[a] Grades were assigned numerical scores as follows: A = 8, B = 6, C = 4, D = 2, F = 0.

[b] For each race, there are significant differences among the means of **students** at different schools ($p < .001$).

TABLE 2-4 . CUMULATIVE GRADES,BY SCHOOL AND BY RACE

School[b] Number	BLACK STUDENTS			WHITE STUDENTS			Significance of race Difference
	N	Mean Grade Aver.	Stand. Dev.	N	Mean Grade Aver.	Stand. Dev.	
1	18	4.2	1.1	221	4.4	1.4	not signif.
2	139	3.0	1.3	315	4.5	1.4	.001
3	185	3.4	1.3	224	4.3	1.5	.001
4	199	3.7	1.3	227	4.2	1.5	.001
5	205	3.2	1.3	219	4.5	1.4	.001
6	215	3.4	1.3	235	4.7	1.7	.001
7	222	3.8	1.5	234	4.5	1.7	.001
9	276	3.3	1.5	278	4.2	1.8	.001
10	138	4.2	1.6	101	5.3	1.5	.001
11[b]	163	4.1	1.3	146	5.5	1.5	.001
12	154	4.2	1.4	-	-	-	-
All Schools	1914	3.6	1.4	2200	4.5	1.6	.001

---

[a] Grades were assigned numerical scores as follows: A = 8, B = 6, C = 4, D = 2, F = 0.

[b] For each race, there are significant differences among the mean scores of students at different schools ($p < .001$).

Cumulative grade averages for students at School 8 and for freshmen students at School 11 were not available to us.

examined for Juniors and Seniors. Composite scores on the NEDT have a moderate positive correlation with students' cumulative grade averages (.48 for Blacks and .64 for Whites).

Students who were Freshmen or Sophomores at the time of our study took a different battery of standardized tests--The Metropolitan Achievement Tests. This set includes eleven tests which fall into four major divisions, as follows: 1) *Language Arts*: Reading; Spelling; Language (word usage, punctuation, etc.); and Language Study Skills (use of dictionary, etc.); 2) *Social Studies*: Social Studies Study Skills (reading of maps, tables, etc.); Social Studies Vocabulary; Social Studies Information; 3) *Mathematics*: Mathematical Computation and Concepts; Mathematical Analysis and Problem-solving; 4) *Science*: Scientific Concepts and Understandings; Science Information. The authors of the tests say that they have striven to develop tests "that measure what students have actually been taught. The tests are based on thorough-going analyses of current textbooks, courses of study, and expert formulations of the goals of instruction in the various subject areas." (MAT Guide, 1964, p. 3).

The MAT scores were obtained from the schools in percentile form, indicating how well each student did on each of the eleven tests in comparison to other students at his grade level throughout the nation. Using the percentile score for each of the eleven tests, we have computed a composite MAT achievement score for each student. In computing this composite MAT score, we first converted each percentile score to a stanine score in order to make the scores for different tests more comparable.[4] Next an average stanine score in each of the four major subject areas (Language, Social Studies Mathematics, and Science) was computed. Finally an average score for all four subject areas was computed for each student. These final scores are the composite MAT scores for Freshmen and Sophomores. Composite MAT scores have a moderate positive correlation with the students' cumulative grade averages (.41 for Blacks and .62 for Whites).

How do students of different race and in different schools compare with respect to performance on the two standardized achievement tests? Table 2-5 shows average scores for those who took the NEDT, by school and by race. These data show, first, that in every school the average NEDT scores of white students are considerably higher than those of black students. The difference between races is statistically significant ($p < .001$) at every school where the number of black students taking the NEDT was large enough to warrant making the statistical (t) test for significant difference.

For all schools combined, the average NEDT composite percentile score for Whites was 56.8 (i.e., above the National median of 50.0) while the average composite percentile score for Blacks was 32.6 (considerably below the national median).

In addition to the large difference between races, there were significant differences among groups of students of the same race who attended different schools. (For students of each race, the probability that the observed differences among students at different schools occurred by chance is less than .001). Among black students, by far the highest average NEDT

TABLE 2-5. PERFORMANCE ON NATIONAL EDUCATIONAL DEVELOPMENT TESTS (COMPOSITE PERCENTILE SCORES), BY SCHOOL AND BY RACE

School[a] Number	BLACK STUDENTS			WHITE STUDENTS			Significance of race Difference
	N	Mean Score	Stand. Dev.	N	Mean Score	Stand. Dev.	
1	4	28.8	19.2	90	59.5	24.8	*
2	3	39.0	13.5	103	54.5	26.7	*
3	67	32.0	18.9	91	58.2	26.8	.001
4	79	34.9	17.9	99	51.3	24.7	.001
5	59	34.3	23.6	81	67.1	22.1	.001
6	74	29.3	15.4	96	74.5	23.2	.001
7	73	26.6	22.8	91	44.8	26.6	.001
8	77	14.8	13.6	85	30.3	27.5	.001
9	55	26.3	18.5	65	48.3	24.9	.001
11	95	62.0	21.0	84	78.2	21.1	.001
12	79	24.2	18.0	-	-	-	-
All Schools	665	32.6	23.1	885	56.8	28.2	.001

---

[a] For each race, there are significant differences among the mean scores of students at the different schools ($p < .001$).

No students at school 10 took the NEDT.

* Number of black students having NEDT scores at Schools 1 and 2 was too small to warrant making t test for significant difference.

scores were obtained by students at School 11, the select, mostly "academic" (and mostly Black) school. The lowest NEDT scores were obtained by black students at School 8, the most vocationally-oriented school. The average NEDT score at all-Black School 12 was the second lowest among the twelve school campuses.

Among white students, too, there were significant differences in average NEDT scores across different schools. White students' NEDT scores, like those of Blacks, were highest at School 11, with those at School 6 a close second and those at School 5 also considerably above average. Average white student NEDT scores were lowest at School 8 (where Blacks' scores were also lowest) and were below average also at School 7 and School 9.

When we look at scores of students who took the MAT tests (See Table 2-6), differences between the races and between schools are much the same as the differences found on the NEDT. In every school, average MAT scores of white students were considerably higher than the scores of black students. The difference is highly significant statistically at every school where the number of students of both races who took the MAT is large enough to warrant making the statistical (t) test for significant difference. For all schools combined, the average MAT stanine score for black students was 3.4, which was considerably below the national average stanine score of 5. The average white MAT stanine score was 4.9, approximately equal to the national average.

Average MAT scores of black students differ singificantly among schools (probability of differences among twelve mean scores occurring by chance $< .001$). The highest MAT scores for black students were found at mostly-academic School 11. The lowest MAT scores were obtained by black students at School 8, the most vocationally-oriented school. Black students at the all-Black school 12 had the second lowest average MAT score of any black group. These highest and lowest groups among black students with respect to MAT scores are from the same schools where earlier cohorts of students ranked similarly on the NEDT.

Average MAT scores among white students also differed significantly across schools ($p < .001$) and, again, the same schools whose students ranked highest or lowest on the NEDT had similar ranks with respect to the MAT scores of later cohorts of studetns. White students at School 11 had the highest average MAT scores; white students at School 6 and School 5 also scored considerably above average. White students at School 8 scored lowest on the MAT and white students at Schools 7 and 9 also scored considerably below average .

Educational Aspirations

We asked each student "How far would you like to go in school?" Six possible answers, ranging from "leave high school before finishing" to "go to a graduate or professional school after finishing college" were provided. The data (Table 2-7) show that, among all black studetns almost half (48 percent) said that they would like to go to a four year college or beyond. About one black student in three expressed a wish to go to "a vocational, technical, or business school" or to a "junior or community college" after high school. Eighteen percent of all black students

TABLE 2-6. PERFORMANCE ON METROPOLITAN ACHIEVEMENT TESTS (AVERAGE STANINE SCORES), BY SCHOOL AND BY RACE

School[a] Number	BLACK STUDENTS			WHITE STUDENTS			Significance of race Difference
	N	Mean Score	Stand. Dev.	N	Mean Score	Stand. Dev.	
1	5	4.0	1.1	67	5.0	1.3	*
2	57	3.7	1.4	125	5.1	1.6	.001
3	63	3.8	1.3	73	5.1	1.5	.001
4	75	3.5	1.2	82	4.7	1.5	.001
5	80	3.4	1.3	82	5.5	1.6	.001
6	58	3.7	1.1	70	5.5	1.5	.001
7	56	3.2	.9	62	4.2	1.3	.001
8	56	2.4	.9	77	3.3	1.5	.001
9	63	3.1	1.3	93	4.3	1.4	.001
10	61	3.2	1.1	31	4.6	1.4	.001
11	68	4.4	1.4	67	6.3	1.6	.001
12	43	2.8	1.1	-	-	-	-
All Schools	685	3.4	1.3	829	4.9	1.7	.001

---

[a] For each race, there are significant differences among the mean scores of students at the different schools ($p < .001$).

*Number of black students having MAT score at School 1 was too small to warrant making t test for significance of racial difference.

said they wanted to "finish high school but I don't want any more school after that" and only 1 percent said they would like to "leave high school before finishing."

The distribution of answers for all white students is similar to those for black students. About the same percentage of Whites (46 percent) as of Blacks (48 percent) say they would like to go to a four-year college or beyond. A slightly smaller percentage of Whites than of Blacks (29 percent as compared to 34 percent) indicated a wish to attend a school other than a four-year college after high school. A slightly larger proportion of Whites than Blacks say that they would like to leave high school before finishing (2 versus 1 percent) or have no more schooling after high school (23 versus 18 percent).

When we examine differences in the educational aspirations of black and white students at individual schools, the differences generally are not large. Those differences which existed occurred in those schools (4,7,8, and 9) where the educational aspirations of white students are lowest. In these schools, black students expressed a wish for somewhat more education than white students did. In only one school were the educational aspirations of white students noticably higher than those of black students. This is in School 6, where a relatively high proportion (64%) of white students said they would like to go to a four-year college or beyond but where just over half (51%) of the black students also expressed such wishes. In the other six schools, the educational aspirations of black and white students were closely similar.

Looking at differences in educational aspirations across schools, we see in Table 2-7 that variations among black student groups were generally not large. School 9 had a somewhat smaller-than-average proportion of Blacks (37 percent) who would like to go to a four-year college or beyond. School 11 had a somewhat larger than average proportion of Blacks (66 percent) saying they would like to go that far. Black students at School 8 were somewhat more likely than average Blacks to indicate that they would like no more schooling beyond high school (though, even there, only 30 percent indicated this) and black students in Schools 6 and 11 were slightly less likely than average (8 percent and 11 percent respectively) to indicate this.

Variations across schools in the educational aspirations of white students were somewhat greater than the variations among groups of black students. Four schools (1, 2, 3, and 10) were close to the overall proportion (46 percent) of all white students wanting to go to a four-year college or beyond. Four other schools (4, 7, 8, and 9) were noticeably below the overall average, with roughly 30 percent wanting to go to a four-year college or beyond. In three schools (5, 6, and 11), a higher than average proportion of white students (58, 64, and 74 percent respectively) said they wanted to go this far. As might be expected, the same schools in which relatively high proportions of white students would like to attend a four-year college or beyond had relatively small proportions of white students who wanted no schooling beyond high school; in schools where a relatively small proportion of white students wanted to attend a four-year college, relatively large proportions want no schooling beyond high school.

TABLE 2-7. EDUCATIONAL ASPIRATIONS, BY SCHOOL AND BY RACE[a]

Black Students

(Percentages)

School	N	Leave high school before finishing	finish high school	vocational, technical, or business school	junior or community college	4 year college	graduate or professional school
1	17	0	33	11	11	33	11
2	110	1	23	23	5	40	8
3	145	1	13	30	8	39	10
4	194	1	19	31	5	32	13
5	187	2	14	22	11	39	12
6	180	1	10	27	11	39	12
7	207	1	21	27	9	35	8
8	135	1	29	20	5	33	12
9	220	0	25	29	10	32	5
10	118	4	22	24	3	41	7
11	201	0	8	21	4	43	23
12	158	1	17	30	10	28	15
All Schools		1	18	26	8	36	12

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[a] See appendix for indication of significance of percentage difference of given size.

TABLE 2-7 · EDUCATIONAL ASPIRATIONS, BY SCHOOL AND BY RACE
(cont.)

White Students

(Percentages)

School	N	Leave high school before finishing	finish high school	vocational technical, or business school	junior or community college	4 year college	graduate or professional school
1	219	0	17	30	5	34	14
2	295	1	17	28	7	36	11
3	190	2	17	29	8	38	7
4	215	2	29	31	7	20	11
5	206	1	15	21	7	35	23
6	215	2	11	17	6	41	23
7	220	2	34	23	5	26	9
8	195	4	44	22	2	18	10
9	229	1	34	27	5	25	9
10	101	2	29	20	5	35	10
11	204	1	13	10	3	48	26
All Schools		2	23	24	5	32	14

While the expressed educaitonal aspirations of black students were as high as those of Whites, and in fact slightly higher, it is important to note that the actual position and plans of black students with respect to their high school programs were quite different than those of Whites. Only about half as large a proportion of all black students as of all white students (19 percent versus 39 percent) said that they were currently in the academic program (Juniors and Seniors) or that they planned to take "academic-type courese especially" (Freshmen and Sophomores).[5] The much smaller proportion of Blacks taking or planning to take academic courses was found separately among Juniors and Seniors, among Sophomores, and among Freshmen. To the extent that taking academic courses is helpful for college entrance and/or for success in college, it would seem that a relatively large proportion of black students were pursuing a high school program which is inconsistent with the level of education which they say they would like to achieve.

Black students were a little less optimistic than white students about their chances to fulfill their educational aspirations, but, as Table 2-8 shows, the differences between the races were relatively small. Asked "How good would you say your chances are to go as far in school as you would like," 58 percent of black students and 65 percent of white students said they thought their chances were either "very good" or "pretty good". At the most pessimistic end of the scale, 11 percent of the Blacks and 12 percent of the Whites indicated their chances were "not very good" or that they were pretty sure they would not be able to go as far in school as they would like. The educational chances seen by students did not vary much across the different schools, for students of either race.

Occupational Aspirations

After being asked about his educational aspirations, each student was asked, "How clear an idea do you have right now of what kind of work you would really like to do in your later life?" Those who said they had "no idea what I would like to do" were asked no further questions about their occupational aspirations. Those students who indicated that they had at least thought about one or more possibilities were asked "What kind(s) of work do you have in mind?" They were asked to write in a first choice and a second choice.

A detailed categorization of the occupations given by students as their first choice is shown in Table 2-9. Occupations are grouped into four prestige categories on the basis of the prestige accorded them in the general population, as determined primarily by data obtained in a study of the opinions of a national sample of Americans. (See Hodge, Siegel, and Rossi, 1964 and 1966). These data show that, just as the educational aspirations of black and white students were very similar, so too were their occupational aspirations. Twenty-two percent of Whites and 26 percent of Blacks said they would like to go into an occupation in the highest prestige category. Almost all of these students named a professional occupation. Thirty-twopercent of all black students and 28 percent of all Whites mentioned an occupation at the second prestige level. Semiprofessional occupations (e.g., nurse, interior decorator, newspaper reporter) and technician jobs (e.g., draftsman, X-ray technician, and computer programmer) were the type of jobs at this second prestige level which were most often mentioned by students of both races.

TABLE 2-8. STUDENT EXPECTATIONS ABOUT THEIR CHANCES TO GO AS FAR IN SCHOOL AS THEY WOULD LIKE[a,b]

Expected Chances	(Percentages) Blacks	Whites
Very good	24.5	29.6
Pretty good	33.6	35.4
About 50-50	30.8	23.0
Not very good	6.6	8.7
Pretty sure that won't be able	4.6	3.3
Total	100%*	100%

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*Total does not equal exactly 100% because of rounding of percentages in column

[a] N = 1896 Blacks and 2288 Whites who answered this question

[b] See appendix for indication of significance of percentage difference of given size

TABLE 2-9. DETAILED OCCUPATIONAL ASPIRATIONS OF STUDENTS,[a] BY RACE

Occupation Which Student Would Like to Enter (1st Choice)	Black Students (Percent)	White Students (Percent)
A. First (Highest) Level Prestige[b]		
1. Professional	22	26
2. Business Executive	*	0
Sub-total, first level	22	26
B. Second Level Prestige		
1. Semi-professional	17	14
2. Army officer	*	*
3. Artist; writer; musician	2	3
4. Manager, lower level or level not specified	1	1
5. Own a business	*	*
6. Technician	8	7
(7) Go into relative's business	*	0
(8) Business, not specified	3	1
Sub-total, second level	32	28
C. Third Level Prestige		
1. Farming	*	*
2. Office or clerical work	13	12
3. Salesman	1	1
4. Skilled trade	11	11
5. Protective work	1	3
(6) Athletics	5	1
(7) Stewardess	2	3
(8) Model; fashion	4	1
(9) Beautician	2	2
Sub-total, third level	38	33

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*Indicates less than .5 percent.

[a] N of black students who answered question about occupational choice is 1707; N for white students is 2133.

[b] For most occupations, the prestige level is based on the opinion of a sample of the American population about the occupation(s) in that grouping. (See Hodge, Siegel, and Rossi, 1966). For those occupations preceded by a number in parentheses, the prestige ranking was assigned by the researchers on the basis of their judgment about public opinion.

TABLE 2-9 . DETAILED OCCUPATIONAL ASPIRATIONS OF STUDENTS,[a] BY RACE (cont.)

D. Fourth Level Prestige		
1. Sales Clerk	1	1
2. Semi-skilled or unskilled	3	3
3. Entertainer	2	2
(4) Blue collar, unspecified (e.g., "factory work")	*	1
Sub-total, fourth level	6	7
E. Prestige Level Not Determinable		
1. Armed forces, rank not specified	1	3
2. Housewife; mother	1	1
3. Peace Corps; Vista	*	*
4. Go to college, academic major specified	1	2
Sub-total	3	6

One-third of all white students and somewhat over one-third of all black students (38 percent) said they would like to go into jobs classified at the third level of prestige. Occupations in this grouping which were most often mentioned by students of both races were office or clerical work and skilled trades. Some black students also chose athletics (5 percent) or modeling or fashion work (4 percent).

Only a small percentage of Blacks and of Whites (6 and 7 percent respectively) mentioned any of the semi-skilled or unskilled jobs which were classified at the lowest level of occupational prestige. Finally, a small percentage of both races mentioned other activities (e.g., housewife, Armed Forces with rank unspecified) which could not be classified with respect to occupational prestige.

When we compare the occupational aspirations of black and white students at each individual school (Table 2-10) we still find general similarity between the races. In one school (School 8), white students were somewhat more likely than Blacks to choose an occupation at one of the two lowest prestige levels. In schools 5 and 11, the position of the races is reversed, with somewhat more Blacks choosing occupations at the lower prestige levels and (at School 5 especially) somewhat more Whites choosing occupations at the highest prestige level. But percentage differences in these schools are not large (under 15% difference in a given prestige category); moreover in eight of the eleven school sites where Black-White comparisons are possible, differences in occupational choice between the races is very slight (under 10% difference in proportions choosing an occupation in a given prestige category).

Again it should be noted that, while the occupational aspirations of black and white students are very similar, the much larger proportion of Whites who are taking academic courses and/or getting high grades (see above) would appear to give Whites, on the average, a better realistic chance to enter the professional occupations, as well as some of the semi-professional and technical occupations, to which so many students of both races aspire.

There is, however, relatively little difference in the perceptions of black and of white students about their chances of fulfilling their occupational aspirations. We asked each student "What do you think your chances are of getting the kind of job you mentioned... [as the kind you would really like]". As Table 2-11 shows, black studetns are only slightly less optimistic about their occupational chances. Over two-thirds of the black students and almost three fourths of the white students indicate they are "pretty sure" they can get the kind of job they would really like or that they "probably" could get this kind of job. Less than 20 percent of the Blacks and about 15 percent of the Whites are pessimistic about their chances.

How much difference is there in the occupational aspirations of students of the same race who attend different schools? Among black students choices of preferred occupations were generally similar across schools, with a few moderate deviations from the all-school average. Black students at Schools 2 and 9 were somewhat more likely than those in other schools to mention occupations at the third prestige level (primarily clerical and skilled trade jobs). Students at the all-Black School 12 were least likely of all black students to choose an occupation at the lowest prestige level (primarily semi-skilled and unskilled jobs); only 1 percent mentioned a job in this category.

TABLE 2-10. OCCUPATIONAL ASPIRATIONS OF STUDENTS, BY SCHOOL AND BY RACE.

Black Students

(Percentages)

		Prestige Level of Occupation in General Population[a]				
School	N	First (Highest) Level	Second Level	Third Level	Fourth (Lowest) Level	Level Not Determinable
1	15	25	38	31	6	0
2	100	21	16	50	6	8
3	136	26	29	37	7	2
4	177	22	35	34	9	1
5	172	24	33	38	2	2
6	166	29	35	30	4	1
7	192	19	27	43	7	4
8	100	24	29	36	8	4
9	196	14	26	49	9	3
10	102	16	35	41	5	3
11	191	27	36	30	6	2
12	145	21	43	33	1	1
All Schools	1692	22	32	38	6	3

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[a] See Table 2-9 for a listing of occupations included at each prestige level.

TABLE 2-10. OCCUPATIONAL ASPIRATIONS OF STUDENTS, BY SCHOOL AND BY RACE (cont.)

White Students

(Percentages)

		Prestige Level of Occupation in General Population				
School	N	First (Highest) Level	Second Level	Third Level	Fourth (Lowest) Level	Level Not Determinable
1	213	29	28	34	5	4
2	279	24	29	32	6	9
3	177	24	30	32	6	8
4	191	18	31	36	9	5
5	190	36	29	25	5	4
6	206	38	28	22	7	5
7	203	24	27	39	8	3
8	159	21	18	48	9	5
9	207	21	25	42	9	3
10	83	18	25	41	7	8
11	187	32	31	18	4	15
12	--	--	--	--	--	--
All Schools	2095	26	28	33	7	6

TABLE 2-11. STUDENT EXPECTATIONS OF THEIR CHANCES TO GET THE KIND OF JOB THEY WOULD LIKE TO HAVE[a,b]

(Percentages)

Expected Chances	Blacks	Whites
"Pretty sure"	33.5	38.9
"Probably"	34.3	35.0
Chances aren't too good, but some chance	17.4	13.4
Very little chance	2.1	2.1
Don't know	12.6	10.6
Total	100%*	100%

---

*Total does not equal exactly 100% because of rounding of percentages in table.

[a] N_s = 1756 black students and 2175 white students who answered the relevant question

[b] See appendix for indication of significance of percentage difference of given size.

Among white students also, variations in occupational aspirations were generally not large across schools. White students in Schools 5 and 6 were most likely to mention occupations at the highest prestige level (primarily professional). Whites at these same schools (5 and 6), as well as those at School 11, were least likely to name occupations at either the third or fourth prestige level. White students at Schools 8 and 9 were somewhat more likely than average to mention occupations at one of the two lowest prestige levels.

Sex Differences. We may also note that among students of both races, some types of occupational choice differed considerably by sex. (See Table 2-12). Among students of both races, boys were much more likely than girls to aspire to a skilled trade; to protective work; to semi-skilled or unskilled work; to the armed forces; and to athletics. Boys were also somewhat more likely to aspire to a profession; to be a manager or proprietor; and to sales, "business", or white collar work (e.g., "insurance", "bank"). Girls were much more likely to choose a semi-professional occupation (e.g., nurse); office or clerical work; a job as a stewardess; modelling or fashion work; or work as a sales clerk. Students of both sexes were almost equally likely to aspire to an occupation in the "technician" category (e.g., medical technician, computer programmer) or to a career as an entertainer.

Changes in Opinions About Other-Race People

Prior Opinion. We asked each student who took the questionnaire, "In general, what was your opinion of most (other race) people just before you came to this high school?" The data are presented in Table 2-13A.

For black studetns in all schools combined, 42 percent said they had a good opinion of white people prior to their attendance at their present high school, 29 percent said they had a poor opinion, and 30 percent said they had no real opinion of white people. In 11 of the 12 school sites, there were more black students who reported having had either a "good" or a "pretty good" opinion of white people than those who had a poor opinion of Whites (either "not too good" or "not good at all").

Results for white students parallel those for Blacks in that, in 11 out of the 12 school sites, there were more white students who said that they had a good opinion of black people prior to attending their present school than those who said they had a poor opinion at that time. The proportions of white students saying they had a good opinion of Blacks were generally higher than the comparable figures for black students, reaching a majority of white students in 6 of the 11 bi-racial school sites. For white students in all schools combined, 54 percent reported a good opinion of Blacks prior to attending their present school, 30 percent reported a poor opinion of black people, and 16 percent said they had no real opinion at that time. The percentage of those reporting no prior opinion is much smaller for white students than for black students.

There were some differences among schools in the prior opinions reported by students, especially for white students. White students at Schools 11 and 1 were more likely than Whites in other schools to say that they had a good opinion of black people prior to coming to high school. White students at School 10 were

TABLE 2-12 DETAILED OCCUPATIONAL ASPIRATIONS OF STUDENTS,[a] BY RACE AND SEX

First Occupational Choice	Black Boys (N = 788) Percentages	Black Girls (N = 919) Percentages	White Boys (N = 1059) Percentages	White Girls (N = 1074) Percentages
Professional	24.6	19.6	27.3	24.2
Semi-professional	8.6	23.9	11.3	16.2
Technician	7.9	7.2	6.7	7.5
Executive	.3	0	.1	0
Low level manager	0	0	.8	.4
Management, unspecified	2.0	.3	.7	0
Own business	.5	.1	.8	.1
Relative's business	0	0	.1	0
"Business"; white collar	4.3	1.7	1.6	1.0
Salesman	1.1	.4	.8	.1
Sales clerk	.3	.8	.4	1.6
Office, clerical work	2.7	21.7	1.1	21.8
Skilled trade	19.2	2.6	19.5	1.5
Protective work	2.8	.1	5.0	.7
Semi-skilled; unskilled	5.7	.5	5.7	.7
Blue collar, unspecified	.4	.3	1.1	.5
Armed forces, officer	.4	0	.6	0
Armed forces, other	1.5	.9	4.6	.4
Entertainment	1.8	2.2	1.7	1.7
Athletics	9.5	.5	2.5	.1
Stewardess	.1	2.9	0	4.9
Model; fashion	.1	6.4	0	2.0
Farming	0	0	.4	.3
Housewife; mother	0	1.3	0	2.3
Peace corps; Vista	0	.1	.2	.6
Beautician	.3	3.5	0	4.2
Artist; writer; musician	2.8	2.0	3.1	3.4
College major mention	.9	.2	2.2	2.0
Other	.8	.4	1.1	2.0
Not sure	1.5	.2	.6	0
Total	100	100	100	100

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[a] Columns may not add to exactly 100% because of rounding of entries in each column.

the most likely to say they had a poor opinion of black people prior to attending high school. Black students were much more consistent across schools in their opinions of Whites prior to high school. Only the Blacks in School 1 deviated much from the average figures. A high percentage of that small group said their prior opinions of Whites were good. Black students in School 2 were slightly more likely than average (41 percent in that school) to say that they did not have a good opinion of Whites prior to coming to that school.

Change in Opinion. Each student also was asked: "Since coming to this school, has your opinion of most (other-race) people gotten worse, gotten better, or stayed the same?" Students were asked to check one of the following answers: gotten much better; gotten a little better; stayed about the same; gotten a little worse; gotten a lot worse. Table 2-13B shows the answers given by students to this question, separately for each race in each school.

Looking first at the answers of black students, we see that in every one of the twelve school sites there were substantial proportions of black students, ranging from 30 percent to 49 percent (averaging 41 percent for all schools) who said that their opinion of white people had not changed since coming to this school. But there were also in every school site substantial proportions--ranging from 34 percent to 57 percent and averaging 44 percent--who said that their opinions of Whites had changed for the better. Moreover, in every school site there were substantially more black students who reported a change for the better in their opinions of Whites than those who reported a change for the worse. For all school sites combined, black students whose opinions of Whites changed for the better outnumbered those whose opinions changed for the worse by almost three to one (44 percent to 15 percent).

The predominant change toward more favorable opinions of Whites was found at the essentially-all-black School 12 as well as at racially integrated schools, although the ratio of favorable to unfavorable change at School 12 was not as large as the average for Blacks in all schools. The movement toward favorable change in School 12 cautions us, however, that some part of the opinion change in integrated schools may be due to experiences outside the school.

For white students, as for black students, there are sizable proportions in each school--ranging from 21 percent to 52 percent--who said that their opinions of people of the other race had not changed since attending their school. For all schools combined, 38 percent of white students said their opinions had not changed--a figure close to that for black students. Moreover, as with Blacks, the proportion of Whites who said their opinions had improved (36 percent) was larger than the proportion who said their opinions had changed for the worse (27 percent)--though the overall ratio of favorable to unfavorable change was smaller for Whites than for Blacks. In eight of the eleven school sites at which there were substantial numbers of Whites, there were larger proportions of white students reporting an opinion change for the better than for the worse. In several schools, the ratio of favorable to unfavorable change was large--especially the 38 to 9 ratio at School 1, the 38 to 13 ratio at School 11, and the 47 to 18 ratio at School 3. In five other schools, the ratio of favorable to unfavorable changes among white students was lower but still substantial.

TABLE 2-13. STUDENTS' OPINIONS ABOUT OTHER-RACE PEOPLE[a]

A. "In general, what was your opinion of most (other-race) people just before you came to this high school?"

(Percentages)[a]

Black Students

School	N	"good" or "pretty good"	"not too good" or "not good at all"	"had no real opinion of them"
1	18	72	22	6
2	127	32	41	28
3	155	36	30	34
4	190	38	35	26
5	187	41	30	29
6	199	45	28	28
7	210	43	27	31
8	153	44	35	22
9	226	45	21	35
10	128	41	31	28
11	199	48	23	29
12	149	38	21	41
All Schools	1945	42	29	30

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[a] Percentages differ very slightly from those in earlier report (Patchen and Davidson, with Hofmann and Brown, 1973) because a few students who did not complete questionnaires carefully were not included in this tabulation.

See Appendix for indication of the statistical significance of a percentage difference of a given size.

TABLE 2-13. STUDENTS' OPINIONS ABOUT OTHER-RACE PEOPLE (cont.)

A. "In general, what was your opinion of most (other-race) people just before you came to this high school?"

White Students

School	N	"good" or "pretty good"	"not too good" or "not good at all"	"had no real opinion of them"
1	211	65	22	13
2	298	57	29	14
3	199	43	32	25
4	207	48	31	21
5	208	49	36	16
6	206	54	32	14
7	218	48	35	18
8	186	54	27	18
9	226	55	33	12
10	101	41	43	17
11	198	73	16	11
12	--	--	--	--
All Schools	2259	54	30	16

TABLE 2-13. STUDENTS' OPINIONS ABOUT OTHER-RACE PEOPLE (cont.)

B. "Since coming to this school, has your opinion of most (other-race) people gotten worse, gotten better, or stayed the same?"

Black Students

School	N	Better[b]	Same	Worse[a]
1	18	39	44	17
2	126	48	34	18
3	155	59	30	13
4	189	35	40	24
5	187	39	40	21
6	199	45	39	17
7	208	45	43	12
8	153	48	38	14
9	226	48	43	10
10	129	50	43	8
11	199	42	49	10
12	152	34	47	19
All Schools	1945	44	41	15

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[a] See Appendix for indication of significance of percentage difference of a given size.

[b] Better category includes "gotten much better" and "gotten a little better." Worse category includes "gotten a lot worse" and "gotten a little worse."

TABLE 2-13. STUDENTS' OPINION ABOUT OTHER-RACE PEOPLE (cont.)

B. "Since coming to this school, has your opinion of most (other-race) people gotten worse, gotten better, or stayed the same?"

White Students

School	N	Better[a]	Same	Worse[c]
1	212	38	52	9
2	299	28	43	29
3	200	47	36	18
4	208	35	43	22
5	202	25	25	50
6	207	28	21	52
7	217	40	36	24
8	186	35	39	26
9	225	43	36	22
10	100	44	25	31
11	201	38	49	13
12	--	--	--	--
All Schools	2264	36	38	27

In School 2 the proportion of white students who reported their opinions of black students had gotten worse was about equal to the percentage who said their opinions had gotten better (29 to 28 percent), and in two schools there were roughly twice as many white students whose opinions changed for the worse rather than the better. In these latter two schools (Schools 5 and 6), 50 percent and 52 percent of the white students, respectively, said their opinions of Blacks got worse since they attended their high schools. The results concerning changes in white students' opinions of black people since coming to high school show, then, wide variations among schools, with predominantly favorable changes in opinions toward Blacks in most schools but predominantly unfavorable changes in two schools.

Finally, we may compare racial opinion changes among black students and white students at each school. The data of Table 2-13B show that there was substantially less positive opinion change and/or substantially more negative change among white students than among black students in seven out of eleven schools. This difference was particularly notable at Schools 5 and 6 where black students were, on balance, changing opinions toward Whites in a positive direction at the same time that a relatively large proportion of Whites were changing in a negative direction . In no school was there a substantially greater negative opinion change (or a smaller positive opinion change) among black students than among white students. Overall, these data indicate that while most racial opinion change among white students was positive, opinion change among black students was, with fair consistency, even more strongly and more uniformly positive.

Relationships Among Outcomes

What are the relationships between the various outcomes we have been considering i.e., among our measures of effort, academic performance, aspirations, and opinion change. Table 2-14 shows the relevant correlations, separately for black students and for white students.

For both races, the data generally show small to moderate positive associations (from about .30 to .40) between students' scores on the index of academic effort and their grades. Correlations between effort scores and scores on the NEDT and MAT achievement tests are quite small (.12) for Whites. For black students, effort scores correlate weakly (.18) with NEDT scores but slightly more strongly (.33) with scores on the MAT (which apparently emphasizes information from courses more than does the NEDT). Overall, these data indicate that students' efforts, at least as measured by our index, can explain some, but only a fairly small portion, of the variance in academic performance.

Let us look next at the relationships between academic performance and aspirations for the future. With respect to educational aspirations, the data of Table 2-14 show moderate correlations between the educational aspirations of white students and their academic performance (current grades, cumulative grades, NEDT scores, MAT scores). For black students, the parallel correlations between educational aspirations and academic performance measures, while also positive, are weaker than the correlations for white students. In other words, there is less agreement among black students than among white students between educational hopes and academic performance.

TABLE 2-14. CORRELATIONS[a] AMONG MEASURES OF OUTCOMES IN SCHOOL (DATA FOR BLACKS OUTSIDE PARENTHESES: DATA FOR WHITES IN PARENTHESES)

	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cumulative Grades (1)	.41 (.62)	.48 (.64)	-.30 (-.37)	.72 (.82)	-.13 (-.31)	.29 (.43)	-.04 (.05)
Metropolitan Achievement Test Score (2)		.00 (.00)	-.33 (-.12)	.39 (.54)	-.13 (-.42)	.31 (.53)	-.009 (.07)
National Educational Development Test Score (3)			-.18 (-.12)	.32 (.52)	-.21 (-.42)	.30 (.54)	.05 (.11)
Effort Toward Academic Goals (4)				-.34 (-.41)	.03 (.21)	-.18 (-.25)	.07 (.003)
Current-Semester Grades (5)					-.13 (-.32)	.27 (.42)	-.08 (.05)
Occupational Aspirations (6)						-.34 (-.54)	-.003 (-.04)
Educational Aspirations (7)							-.05 (.05)
Change in Opinion Toward Other Race (8)							

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[a] Product-moment correlations.

The same pattern is true with respect to the relation between occupational aspirations and academic performance. For white students, correlations between the prestige level of occupational aspirations and performance measures (grades, achievement test scores) are not strong but they are in the .30s and .40s. For black students, the correlations between prestige level of occupational aspiration and the performance measures are very weak (three of the four correlations are .13)--i.e., for black students, the prestige level of occupational choice bears very little relation to the student's school performance. Thus, black students seem particularly apt to say they would like to enter an occupation which may require better performance in school than they are currently attaining.

Finally, the data show only small and mostly non-significant associations between racial opinion change and the measures of effort, academic performance, and aspirations. There is a tendency for black students who did better on achievement tests to report less positive opinion change toward white people since coming to high school. However, this association is very small. One conclusion to be drawn is that opinion change does not appear to be, for either racial group, a reflection of either frustration or satisfaction stemming from academic performance. The results indicate also that inter-racial opinion change is an outcome which requires separate consideration from the other outcomes which we have examined.

Summary and Conclusions

The data indicate first that black students and white students generally did not differ greatly with respect to academic effort or with respect to absence from school. In general, white students scored higher on the effort measure and had fewer absences but these differences, when they occur, are generally quite small and in several schools black students show up more positively than Whites on the effort or absence measure. Academic effort and absence differ more by school than they do by race.

When we consider grades and achievement scores, differences between the races are much larger. In every school, the grades and the standardized achievement scores of white students were higher than those of black students and usually markedly so. In addition to the racial differences in academic performance, there were also substantial differences among students of the same racial group who attended different schools. Black students who attended the all-Black school scored second lowest on standardized achievement tests, but their average score was above that of black students at substantially integrated School 8, a school where students of both races scored lowest on standardized achievement tests.

While black students generally had considerably lower grades and achievement scores than their white schoolmates, they did not, in general, have lower aspirations. In answer to questions about how far the student would like to go in school and about what kind of work he would like to do in later life, black students generally indicated aspirations as high as those of white students; in some schools, in fact, the aspirations of Blacks were somewhat higher than those of Whites. Overall, almost half of the students of both races said they would like to go to a four-year college or beyond. Similarly, over half of the students of both races chose an occupation of relatively high prestige as the kind of work they would like to do. Black students were only slightly less optimistic than white students about their chances to fulfill the aspirations they expressed.

The similarity between black students and white students with respect to educational and occupational aspirations is in striking contrast to the marked racial differences in grades and achievement scores. It is in sharp contrast, too, to the different distribution of the racial groups in the various school programs. At the time of this study, 39 percent of our representative sample of white students, but only 19 percent of the black students, were enrolled in the Academic program (or said they planned to take "Academic-type courses"). Our data show, further, that there were moderate associations between academic performance and aspirations among white students but that academic performance and aspirations were more weakly related among black students.

Finally, the data show that students of both races were more likely to change their opinions of other-race people in a positive, rather than in a negative, direction since coming to high school. Positive opinion change was more widespread among black students than among white students in most schools. Racial opinion change among students of a given race also differend among schools--especially among white students. Among Whites, while opinion change was predominantly positive at most schools, it was predominantly negative at two schools.

A number of important issues for the schools and the community are suggested by the data presented in this chapter. First, the large differences in academic performance between the races, and among schools as well, raise questions which merit further attention. What accounts for such performance differences among groups of Indianapolis high school students? What things can the schools and the community do to try to reduce such differences?

Secondly, the data indicate the possibility of a real and widespread discrepancy between the aspirations and the objective school program and performance of many students, especially black students. Such discrepancies may produce--in school and/or later--widespread frustration, disillusion, and anger. It seems of great importance for school officials to investigate further the extent and possible sources of such gaps between aspirations and school position and to take measures to reduce such gaps. This may mean helping some students to reduce (or not to form) unrealistic aspirations. It also may mean examining teaching methods, programs, and counseling procedures so as to increase the probability that more students will be able to fulfill high aspirations.

Finally, the data concerning racial opinion change indicate that the community and the schools cannot assume that placing students in a racially mixed school will automatically and inevitably lead to more positive racial attitudes. There is a need to know more about the circumstances which promote positive opinion change and a need to consider possible steps which may be taken, both within and outside the schools, to encourage more positive interracial attitudes.

In chapters to follow, we will not be able to provide complete answers to the questions raised in the present chapter. Finding satisfactory answers--

particularly with respect to practical solutions--is a long-term quest in which the intimate knowledge of those most familiar with the schools, as well as contributions from those outside, will be necessary. We will, however, in the following chapters, present some additional information which is relevant to the issues raised above. In particular, we will report the extent to which the outcomes examined in this chapter--effort, performance, aspirations, and opinion change--are related to a variety of factors both within and outside the school situation.

Footnotes--Chapter 2

[1] The test of significance of difference between black and white students at School 1, on this measure as well as other measures, should be interpreted cautiously. The relatively small number of black students at this school means that the data may not meet the assumptions of the significance test as fully as do the data from other schools.

[2] These data show the number of absences which each student had during the Spring 1971 semester.

[3] Data on cumulative grades were not available for School 8 and for Freshmen at School 11.

[4] A stanine is a value on a simple nine-point scale of normalized standard scores. Conversion to stanine scores when averaging MAT test results is recommended by the test authors (MAT Guide, 1964).

[5] Fuller data on the academic program in which students were enrolled, or the types of courses they planned to take, are presented on page 51 of our earlier report (Patchen and Davidson, with Hofmann and Brown, 1973).

3. FACTORS RELATED TO ACADEMIC EFFORT, PERFORMANCE, ASPIRATIONS, AND OPINION CHANGE

What seems to affect the amount of effort which students devote to their school work? What determines how well they do in school -- especially their grades and their scores on achievement tests? What affects whether their aspirations for further education and an occupation are high or low? And, finally, what seems to account for whether their opinions of the other race change for the better or for the worse?

Our overall study has focused on the amount and nature of interracial interaction. Therefore, we will pay special attention to how the various outcomes mentioned above are related to students' interracial experiences. However, we also will consider the extent to which each of these outcomes is associated with aspects of the students' home background, with the students' personal characteristics, with the school situation, and with the subjective orientations (e.g., goals and expectations) of the students.

Students from all schools are included together in these analyses, with the exception of black students from all-black School 12, white students from the (then) almost all-white School 1, and white students from the (then) almost all-white sophomore, junior, and senior classes of School 2. Since the primary focus of our study is on inter-racial contact, these students, who had little or no cross-racial contact in high school, were omitted from the analysis. In all of the analyses, black students and white students are examined separately.

Statistical Methods Used

Before presenting the results, it is necessary to explain something about our methods. In examining the relationship between each possible predictor (e.g., amount of inter-racial contact) and a given outcome (e.g., grades), we will show first the correlation between the predictor and the outcome.[1]

However, the correlation between a given predictor and a given outcome may be affected by the associations which these variables have with other variables. For example, amount of inter-racial contact and grades may both be associated with parents' educational level. In this case, at least part of the correlation between inter-racial contact and grades would be due to the fact that they are both related to parents' educational level.

In order to assess the separate, independent effect of each possible predictor, as well as to provide other information beyond that provided by a simple set of correlations, we have relied primarily on the statistical technique of multiple regression analysis. This method could not be used in the analysis of inter-school variation because of the small number of schools. Used with the much larger number of individual students, this technique permits us to see how well each one of a number of possible variables ("predictors") can predict a given outcome (such as grades or opinion change). The size of the relationship between the outcome to be explained and each specific predictor is assessed independent of the effect of all other predictors. In other words, the effects of all other variables which may influence the type of outcome being examined are held constant (removed) statistically while we look at the relation between this outcome and the single predictor being studied at the moment.

Variables which were thought to be possible predictors of students' effort, performance, and aspirations are divided into two sets: the first set includes variables pertaining to a) inter-racial contact; b) students' home backgrounds; c) students' personal characteristics; and d) school situation. The second and much smaller set includes variables pertaining to students' attitudes, expectations and aspirations. We believe that variables in the first set tend to be, in general, casually prior to variables in the second set. For example, the educational level of the students' family may affect the student's expectancy that he can fulfill his educational goals. Since it is not appropriate to control the effects of a given predictor by a second predictor which is either a determinant of the first predictor or its consequence, it is desirable to treat the two sets of predictors separately.[2]

Within each set of predictors, the size of the relationship between each predictor variable and the outcome to be explained is indicated by a number called the partial Beta coefficient (partial Beta, for short). The partial Beta indicates the amount of change in the outcome which is associated with each unit of change on the particular predictor. The most important thing to keep in mind in interpreting the partial Betas shown in the Tables is that the rank order of the partial Betas reflects their relative importance as predictors of the outcome in which we are interested. Thus, if two predictors are related to grades in a regression analysis and predictor 1 has a larger partial Beta than predictor 2 (regardless of whether the Beta's sign is a plus or minus), then predictor 1 is a better predictor of grades than is predictor 2.

For assessing the relative importance of the predictors, the reader should, therefore, focus on the partial Betas rather than on the correlations. Our own discussion of the results will, likewise, be based primarily on the partial Betas. However, the simple correlations are also of some interest in indicating the amount of association which actually exists between two variables, before statistical adjustments for the effects of other variables are made.[3]

In addition to indicating the relative importance of each possible predictor (by rank order of their partial Betas), the regression analysis also gives us the multiple correlation coefficient (R). This figure when squared (i.e., R^2) tells us the amount of variation in the dependent variable (such as grades or educational aspirations) which is accounted for or "explained" by a set of predictors together.

Finally, in outlining the methods of analysis used, a note about the direction of causation is in order. The statistical analyses performed tell us how well a given variable predicts the behavior in which we are interested. They do not tell us anything about the direction of causation. The predictor may be one of the causes of the dependent variable; the dependent variable may be one of the causes of the predictor; or they may have reciprocal effects. In many instances, one direction of causation is much more plausible--e.g., it is more plausible that the educational level of a student's parents affects his grades, than vice versa. In our discussion, we sometimes will tend to assume a given direction of causation, either on such obvious grounds or because there is theoretical reason or other evidence which points to such a causal direction. The reader should remember, however, that causal relations other than those going from predictor to dependent variable are possible.

Effort Toward Academic Goals

We consider first the effort which students put forth in their school work. What factors affect how diligent students are in school?

For each student, a net score of effort toward academic goals was computed. This score was derived from a) an estimate of the amount of time he spend on homework during the semester, based on his own report of the average amount of time spent doing homework each day; minus b) an estimate of the time he lost from or directed away from, academic work during the semester as a result of a) being absent from school; b) being late to class; c) missing a class without permission; d) not getting all his homework done; and e) being told (by a teacher) to come for a conference "because (he) supposedly did something wrong". Information about the frequency of each of these events during the then-current semester was obtained from each student.

To what extent was the academic effort of the students of each race associated with each of the sets of possible predictors considered in our analysis? Table 3-1 presents a summary of the variables which make a significant contribution to predicting effort toward academic goals. (More detailed data are presented in Appendices A-1 and A-2).

Inter-racial Contact.

Among black students, scores on the measure of net effort toward academic goals have no significant association with any of the measures of inter-racial contact (when other relevant factors are controlled). This lack of association is true both for measures of opportunity for contact with whites and of actual interaction with Whites; the lack of association holds also both for measures of contact with Whites in high school and outside high school.

Among white students, inter-racial contact has little association with effort toward academic goals but there are two statistically significant, though weak, realtionships. White students who most often avoided black students were

TABLE 4-1. SUMMARY OF VARIABLES WHICH MAKE SIGNIFICANT CONTRIBUTION TO PREDICTING EFFORT TOWARD ACADEMIC GOALS[a] (DATA ARE PARTIAL BETA COEFFICIENTS)

	Black Students	White Students
Regression Analysis I		
A. Inter-racial Contact		
1. Avoidance of other-race students		-.07*
2. Unfriendly contact with other-race students		+.08*
B. Student's Home Background		
1. Living with mother only		-.06*
2. Living with parent substitutes		-.06*
3. Family concern about school work		+.08*
C. Student Characteristics		
1. Sex		+.19***
2. IQ	+.08*	
3. Initial preference for present high school		-.06*
4. Time spent helping family	+.11***	+.12***
5. Unfriendly interaction with own-race students	-.12***	
6. Satisfaction with life circumstances		+.10***
D. School Situation		
1. Being in academic program	+.20***	+.21***
2. Being in fine and practical arts program	+.10**	+.07*
3. Evaluation of teachers	+.16***	+.16***

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[a] Signs of the index of academic effort have been changed for clarity; more positive scores now indicate greater effort.

TABLE 4-1. SUMMARY OF VARIABLES WHICH MAKE SIGNIFICANT CONTRIBUTION
(cont.) TO PREDICTING EFFORT TOWARD ACADEMIC GOALS[a]
(DATA ARE PARTIAL BETA COEFFICIENTS)

Regression Analysis I	Black Students	White Students
4. Time spent helping family	+.11***	+.12***
5. Unfriendly interaction with own-race students	-.12***	
6. Satisfaction with life circumstances		+.10***
D. School Situation		
1. Being in academic program	+.20***	+.21***
2. Being in fine and practical arts program	+.10**	+.07*
3. Evaluation of teachers	+.16***	+.16***
4. Perception of favoritism toward blacks by school staff	-.11*	
5. Perception of favoritism toward Whites by school staff	+.15**	
Regression Analysis II		
Orientations Toward Education and Occupation		
1. Prestige level of occupation aspiration		+.12***
2. Perceived chance to reach educational aspiration		+.07*
3. Importance of academic goals	+.24***	+.28***
4. Interest in classes	+.12***	+.17***

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*Indicates relationship is significant at .05 level.

**Indicates relationship is significant at .01 level.

***Indicates relationship is significant at .001 level.

slightly *less* likely to show strong academic effort while white students who had more *unfriendly* contacts with black students were slightly *more* likely to show strong academic effort (when other factors are held constant). However, academic effort of Whites was not associated significantly with a) the amount of opportunity for contact with black students in high school; b) the amount of friendly contact with black students in high school; or c) the amount of opportunity for, or amount of friendly, contact with Blacks outsize of high school.

School Situation

For students of both races, aspects of the school situation were the strongest predictors of effort toward academic goals. Students who were in (or oriented toward) the Academic Program,[4] and to a lesser extent those in the Fine and Practical Arts Program, reported more academic effort than did those in the General Program. A second major predictor in this set is the student's overall evaluation of his teachers. The more favorable his evaluation, the greater his reported effort. This is true for students of both races.

For black students, but not for Whites, perception of favoritism by school staff toward one race or another helps to predict academic effort. The more that black students perceived favoritism toward the other race, the *more* academic effort the Blacks reported; the more they perceived favoritism toward their own race, the *less* effort they reported. The reasons why black students should report somewhat greater academic effort when they perceive discrimination against them, and less effort when they perceive discrimination in their favor, are not clear. It may be that black students attempt to overcome perceived discrimination by greater effort and relax their efforts when they feel favored. Another possible explanation is that the most academically energetic and ambitious black students may tend to be most alert to signs of possible discrimination against Blacks. A third possibility is that perceived discrimination and academic effort are not causally related, even though they happen to be associated. For example, blacks who feel more discriminated against may happen to be in schools with greater pressures for academic effort.

Student Characteristics

A number of student characteristics are related to academic effort, although these characteristics generally are different for black students than for white students (when other factors are controlled). Among black students, academic effort went down as students had more unfriendly interaction (fights, arguments) with schoolmates of their own race, but increased slightly as students' IQ scores increased. Among white students (but not significantly among Blacks), academic effort was considerably higher for girls than for boys, was higher among students who were more satisfied with their life circumstances and was slightly higher also among students who had an initial preference for their present high school. Among students of both races, academic effort increased as students spent *more* time helping their families around the house.

Home Background

In general, the home background factors assessed in this chapter are not related strongly to academic effort, especially among black students. Among black students, the only "home" factor which approaches (but does not quite reach) a statistically significant association with academic effort, when other factors are controlled, is the family's reported concern with the students school work (i.e., his homework and his grades). The greater the family concern about school work, the greater the academic effort of the black student tended to be. However, our measure of academic effort among black students is not related significantly to a) parents' education; b) number of children in the family; c) family composition--e.g., whether only one parent is present; or d) family concern about the student's future education and occupation.

Among white students also, academic effort is related to the family's concern with the student's school work. Academic effort of white students was also slightly, but significantly, less among students who lived with their mother only, and among students who lived with parent substitutes, than it was among students who lived with two parents. For white students, as for black, academic effort is not related significantly to parents' educational level.

Student Goals, Beliefs, and Interests

In a separate regression analysis, we explored the associations between our measure of academic effort and a number of relevant student goals, beliefs, and interests.

For students of both races, the importance of academic goals (i.e., getting good grades, getting a good education, and being able to go to college) is a fairly strong predictor of academic effort. The more important academic goals were to the student, the greater his reported academic effort. Among both black and white students, also, greater interest in classes helps to predict greater academic effort.

Among white students, academic effort was higher among students who aspired to occupations of higher prestige and was also slightly higher among students who saw the best chances to fulfill their educational aspirations (though effort is not related to perceived chance to fulfill one's occupational aspiration). For black students, however, academic effort is not related to the level of occupational aspiration; nor is academic effort related for black students (when other factors in this set are controlled) to the student's perception of his chances to fulfill either his educational or his occupational aspirations.

Among students of both races, academic effort is not related significantly (other things controlled) to extent of agreement with the statement "Anyone, whether black or white, can get ahead in this country if he tries hard enough." (In fact, among black students, there was a tendency for those who disagreed more with this statement to report more academic effort). For students of both races, also, the extent to which the student had decided about the occupations he would like to enter is not related to effort in school.

Summary of Results Concerning Effort

We may summarize the results concerning academic effort as follows: Academic effort is not related significantly to inter-racial contact among black students and is only very slightly related to inter-racial contact among white students. Among students of both races, effort is most strongly related to features of the school situation--especially to being in the Academic program and to evaluating one's teachers favorably.

Greater school effort is also associated with certain student characteristics. Among white students, girls, those who spend more time helping their families, and those most satisfied with their life circumstances, are especially likely to be diligent in their school work. Among black students, more academic effort was displayed by those who spent more time helping their families and those who reported least unfriendly interaction with their same-race schoolmates. It may be noted that these personal characteristics which seem to lead to greater academic effort, among students of both races, are those that reflect good social and family adjustment as well as conformity to social norms.

While academic effort is related fairly substantially both to school factors and to students' personal characteristics, effort has little relationship, especially among black students, to aspects of the students' home background.

Finally, a separate analysis dealing only with students' subjective orientations toward education and occupation, showed that, for both black and for white students, academic effort increases as students see academic goals as more important and as their interest in their classes increases. Among white students, effort was greater among those with higher occupational aspirations but, among Blacks, effort was not related significantly to either educational or occupational aspirations.

The total set of predictors (combining those from both analyses) accounts for 20 percent of the variance on our measure of academic effort among black students and 30 percent of the variance among white students.

Academic Performance

We consider next the possible determinants of academic performance (i.e., grades and achievement scores). To what extent is performance related to various aspects of inter-racial contact, of home situation, of students' backgrounds, of school situation, and of student attitudes and expectations?

We obtained data on four indicators of academic achievement. These are: 1) the grade average which the student earned in the "present" semester (i.e., the same Spring 1971 semester in which our questionnaire data were gathered); 2) the cumulative grade average which the student earned during his high school career, through the Spring 1971 semester; 3) student's total scores on the Metropolitan Achievement Tests (MAT); 4) student's total scores on the National Educational Development Tests (NEDT).[5]

Of these four achievement measures, grades in the present semester and MAT achievement scores are most useful for our purposes. This is because each reflects achievement during or shortly after the period (Spring 1971) that information about student experiences and perceptions were obtained by

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questionnaire.[6] Thus, present semester grades and MAT achievement scores may have been affected by student experiences and perceptions furing the Spring 1971 period. Cumulative grades and NEDT scores, while not irrelevant,[7] are somewhat less useful because they reflect mainly academic achievement prior to the period when students high school experiences and perceptions were assessed.

The detailed results of our analyses bearing on all four performance measures are presented in Appendices A-3 through A-10. A summary of the variables which make a significant contribution to predicting students achievement scores is presented in Table 4-2. A summary of the variables which help significantly to predicting grades is presented in Table 4-3.

Inter-racial Contact

To what extent is the academic performance of students related to their opportunity for inter-racial contact and the nature of such contacts?

Black Students. Looking first at the academic achievement scores of black students, the data generally show little relationship between the academic performance of black students and their contact with white students. More inter-racial contact around school (in the cafeteria, at gym lockers, and at hall lockers) is associated with somewhat higher MAT achievement scores for Blacks. However black students scores on this standardized achievement test (as well as on the NEDT) are not related significantly, after other things have been held constant, to the reported amount of inter-racial contact in the classroom; to the amount of friendly inter-racial contact in high school; to the total amount of contact with Whites outside one's present school; or to the amount of friendly contact with whites outside one's present school.

With respect to the grades of black students, the relationships with inter-racial contact are, again, not strong. Those relationships which are statistically significant show a tendency for greater contact with white students to be associated with lower grades for black students. For grades in the present semester, black students who reported more opportunity for classroom contact with Whites during that semester and Blacks who reported more contact with Whites outside high school, had slightly lower grades than black students with less inter-racial contact. Similarly, cumulative grade averages (for the student's entire high school career) were somewhat lower among black students who reported more contact, and those who reported more friendly contact, with Whites outside their present high school.

Overall, then, the data show a slight tendency for greater inter-racial contact to be associated with higher scores for Blacks on standardized achievement tests, but also to be associated somewhat with lower school grades. The lower grades for Blacks who have greater classroom contact with White students may be due to stiffer academic competition in predominantly white classes. The association between lower grades for black students and greater contact with Whites outside of high school is harder to explain. It may be due to some special characteristics (e.g., programs, marking practices) of the school which students from neighborhoods with more inter-racial contact are likely to attend.

White students. For white students, the various measures of contact with Blacks show no strong relationship with scores on the standardized achievement

TABLE 4-2. SUMMARY OF VARIABLES WHICH MAKE SIGNIFICANT CONTRIBUTION TO PREDICTING STUDENTS' ACHIEVEMENT SCORES (DATA ARE PARTIAL BETAS)

Regression Analysis I	Achievement Tests[a]			
	Metropolitan Achievement Tests		National Educational Development Tests	
	Blacks	Whites	Blacks	Whites
A. Inter-racial Contact				
1. Amount of inter-racial contact outside this high school		-.06*		
2. Opportunity for inter-racial contact around school	+.09*	+.05*		
3. Friendly contact with other-race schoolmates		-.09**		
B. Student Home Background				
1. Parent's education		+.13***		+.10**
2. Living with father only				-.08**
C. Students' Characteristics				
1. Sex (high score= female)	-.09*	-.12***		
2. IQ score	+.60***	+.66***	+.55***	+.65***
3. Unfriendly interaction with same-race students	-.08*			
4. Initial preference for other high school		-.07**		
D. School Situation				
1. Being in academic program	+.28***	+.21***	+.33***	+.23***

TABLE 4-2. SUMMARY OF VARIABLES WHICH MAKE SIGNIFICANT CONTRIBUTION TO PREDICTING
(cont.) STUDENTS' ACHIEVEMENT SCORES (DATA ARE PARTIAL BETAS)

	Achievement Tests			
	Metropolitan Achievement Tests		National Educational Development Tests	
Regression Analysis I	Blacks	Whites	Blacks	Whites
2. Being in fine and practical arts program	+.10*	+.07**	+.14**	
3. Evaluation of teachers	+.15***	+.07*		
4. Perception of school strictness		-.08***		
5. Year in school				-.08**
6. Perception of favoritism toward Blacks in school	-.12*	-.13**		
7. Perception of favoritism toward Whites in school	+.15*			
Regression Analysis II				
Student Interests, Goals, and Aspirations				
1. Importance of academic goals	+.13*	+.11*		
2. Prestige level of occupational aspirations		+.39***	+.20**	+.37***
3. Perceived chance to fulfill educational aspirations		+.10*		+.16**

TABLE 4-2. SUMMARY OF VARIABLES WHICH MAKE SIGNIFICANT CONTRIBUTION TO PREDICTING
(cont.) STUDENTS' ACHIEVEMENT SCORES (DATA ARE PARTIAL BETAS)

Regression Analysis II	Achievement Tests			
	Metropolitan Achievement Tests		National Educational Development Tests	
	Blacks	Whites	Blacks	Whites
4. Perceived change to fulfill occupational aspirations		-.12**		
5. Clarity of occupational plans				-.09*
6. Belief that anyone trying hard can get ahead				-.16***

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[a] Students who were freshmen or sophomores at the time of our data collection (Spring, 1971) took the MAT during their sophomore years. Students who were juniors or seniors in Spring, 1971 had taken the NEDT during their sophomore years.

*Indicates relationship is significant at .05 level.

**Indicates relationship is significant at .01 level.

***Indicates relationship is significant at .001 level.

TABLE 4-3. SUMMARY OF VARIABLES WHICH MAKE SIGNIFICANT CONTRIBUTION TO PREDICTING STUDENTS' GRADES
(DATA SHOWN ARE PARTIAL BETAS)

Regression Analysis I	Grades In Current Semester		Cumulative Grades, Prior to Current Semester	
A. Inter-racial Contact	Black	White	Black	White
1. Amount of inter-racial contact outside this high school	-.07*	-.09**	-.10**	-.05*
2. Opportunity for inter-racial contact in class	-.08*			
3. Friendly inter-racial contact outside this high school		-.07*	-.09*	
B. Students Home Background				
1. Parents' Education		.06*		.06*
C. Students' Characteristics				
1. Sex (high score-female)	.08*	.13***	.09**	.18***
2. IQ score	.17***	.24***	.24***	.29***
3. Unfriendly interaction with same-race students	-.08*			
4. Satisfaction with life circumstances	.18***	.16***	.09*	.13***
5. Time spent on job		-.08**		
D. School Situation				
1. Being in academic program	.22***	.26***	.24***	.31***
2. Being in fine and practical arts program	.12***	.09***	.13***	.09***
3. Being in vocational program	.09**	.09***		.09***

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*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

TABLE 4-3. (cont.) SUMMARY OF VARIABLES WHICH MAKE SIGNIFICANT CONTRIBUTION TO PREDICTING STUDENTS' GRADES
(DATA SHOWN ARE PARTIAL BETAS)

Regression Analysis I	Grades In Current Semester		Cumulative Grades, Prior to Current Semester*	
	Black	White	Black	White
4. No. of activities in which participated while in high school	.18***	.13***	.20***	.13***
5. Evaluation of teachers	.17***	.18***	.16***	.15***
6. Perception of school strictness		-.09***	-.07*	-.07**
7. Year in school		.07**		
8. Perception of favoritism toward Blacks in school			-.10*	
9. Perceived administration responsiveness				.06*
10. Perception of academic status of Whites, relative to Blacks				.07**
11. Perception of favoritism toward Whites in school				-.13***
Regression Analysis II				
Student Interests, Goals, and Aspirations				
1. Importance of academic goals	.22***	.22***	.17***	.23***
2. Prestige level of occupational aspirations	.07*	.24***	.08*	.21***
3. Perceived chance to fulfill educational aspirations	.12***	.19***	.13***	.18***
4. Perceived chance to fulfill occupational aspirations		.09**		.09**

TABLE 4-3. SUMMARY OF VARIABLES WHICH MAKE SIGNIFICANT CONTRIBUTION TO
(cont.) PREDICTING STUDENTS' GRADES
(DATA SHOWN ARE PARTIAL BETAS)

Regression Analysis II	Grades in Current Semester		Cumulative Grades, Prior to Current Semester*	
	Black	White	Black	White
5. Interest in classes	.11***	.13***	.08*	.09***
6. Clarity of occupational plans		-.10***		-.13***

tests. Those associations which are statistically significant (with other things held constant) are not consistent in direction. Those white students who reported more friendly contact with black schoolmates and Whites who reported more contact with Blacks outside their present school, scored somewhat lower on the MAT. On the other hand, more opportunity for contact with black students around school (cafeteria, lockers) was associated slightly with higher MAT scores for Whites. White students' scores on either standardized achievement test battery were not related significantly (other things constant) to the amount of inter-racial contact in classrooms, to the amount of avoidance of, or unfriendly contact with Black students in their present school, or to the amount of friendly contact with Blacks outside their present school.

For white students, as for black students, there was a small but statistically significant tendency for greater inter-racial contact outside the present high school to be associated with lower grades. Those white students who reported a relatively great amount of contact with Blacks outside of their present high school had somewhat lower grades for the present semester and slightly lower cumulative grade averages. Also, White students who had more friendly contacts with Blacks outside of their present high school had slightly lower grades for the present semester. Grades of white students were not related, however, to the amount of contact, or the types of contact, with black students in their present school.

It is not clear why more inter-racial contact outside high school is associated, though slightly, with lower high school grades for Whites. Among the possibilities are 1) that the grade schools attended by such students were poorer than those attended by Whites with less inter-racial contact; 2) that there are family and social class differences (other than those controlled in our analysis) which differentiate these white students from other white students and contribute to their somewhat lower grades; 3) that those white students who associated more with Blacks outside high school were less motivated and/or did more poorly academically than other Whites prior to such inter-racial associations; 4) that greater association with Blacks tended to lower the academic motivation and effort of the Whites. Any or all of these explanations may have some validity. However, it is worth reiterating that the overall effect of inter-racial contact on the academic performance of Whites is slight.

Student Characteristics

The factor which is, by far, most strongly related to academic performance, both for black students and for white students, is the student's IQ score.[8] For scores on standardized achievement tests especially, IQ score is by far the best predictor of any of the factors included in our analysis. One way of re-stating this result is that scores on standardized (IQ) tests, taken in the 8th grade for most of our sample, are a good predictor of scores on standardized (achievement) tests taken during the Sophomore year in high school. We view IQ scores as reflecting certain important abilities (e.g., use of verbal and mathematical concepts) which may be affected by a variety of influences--innate learning aptitude, early family experiences, school experiences, etc. The abilities measured by the standardized achievement tests are not identical to those measured by IQ tests but they require some of the same basic language and mathematical abilities. Thus, we view the strong association between elementary school IQ scores and high school achievement scores as indicating that the level of general achievement up to the 8th grade makes an important contribution to the level of achievement as measured several years later.

IQ scores are also positively related to the grades of students of both races, but the strength of this association is much weaker than the association of IQ with standardized achievement scores. Probably grades are affected by many factors other than general achievement level--e.g., by the students' effort in particular classes, by the students conformity to, and attitudes toward, the teachers; by the teacher's personal reactions to the student; and by variations in teacher methods for testing and evaluating students.

In addition to IQ scores, several other personal characteristics of students help to predict academic achievement. One of these is the student's sex, which has an interesting relationship to academic performance. Both among black students and white students (more strongly among Whites), boys did better than girls on the standardized MATs.[9] However, girls of both races (especially White girls) got better grades than boys, both for the present semester and cumulatively for the entire high school career. These results suggest that the factors which lead to better grades for girls may not necessarily be associated with greater learning of academic material.

Among students of both races, greater satisfaction with life circumstances, both in school and outside school, is associated with higher grades. This association may be an artifact to some extent since one of nine subjects about which students expressed satisfaction was "the grades I am getting in school." However, the strength of the association between overall satisfaction and grades suggests that at least some of the association is genuine. It seems, then, that satisfaction with one's life circumstances, and/or personal characteristics which may be associated with satisfaction (e.g., low anxiety, outgoing personalities), facilitate learning and getting higher grades.

Several additional student characteristics have a significant, though modest, association with academic performance for one racial group. Among black students, the more the student reported unfriendly interaction (fights, arguments) with same-race students in school, the lower his score on the MAT and the lower his grades in the present semester. Among white students, the greater the student's preference for another high school prior to attending his present school, the lower his MAT score. For whites, also, the more time the student reported spending on a job, the lower his grades were in the present semester. The amount of time which the student reported spending to help his family around the house did not make a significant contribution (other predictors controlled) to any of the performance measures, for students of either race.

Students' Home Background. What effect does the student's home background have on his academic performance?

For Black students, none of the aspects of family background which we assessed is related in itself, either to grades or to scores on standardized tests. In particular, the academic performance of black students is not related significantly (other things controlled) to: a) parents' education; b) number of children in the family; c) adults present in the family (both parents, mother only, etc.), d) family concern about the student's school work; e) family concern about the student's future education and occupation.

Among white students, more education of parents is associated with better academic performance; specifically, the greater the education of white student's parents, the higher their grades (both present-semester and cumulative) and the higher their scores on both achievement tests. Other aspects of home background are not related significantly (other predictors controlled) to the academic performance of white students, with the marginal exception of the fact that the small number of white upperclassmen who lived with their father only did slightly worse than other students on the NEDT.

Overall, then, the home background factors which were assessed have very little association with the academic performance of students of either race, with the notable exception that parents' education is related to the school achievement of white students but not of black students.

School Situation

In addition to students' characteristics (especially IQ scores prior to high school), the academic performance of students was associated appreciably with aspects of their position, activities and perceptions in the high school situation. The aspects of school situation which are related to academic performance are generally similar for both black and white students. First, for those of both races, the school program in which the student was enrolled (or toward which he was oriented) made a difference. Most notably, for students of both races, being in the Academic program contributed to higher scores on achievement tests (both MAT and NEDT) and to higher grades (both present-semester and cumulative). Being in the Fine and Practical Arts program also contributed to somewhat higher grades and higher scores on standardized achievement tests. Being in the Vocational program contributed somewhat to higher grades (other things equal) but did not affect scores on standardized achievement tests. (Students in each of the three programs referred to above were compared to those in the General program, which was used as a standard of comparison.)

The differences in academic achievement among students in different programs which are referred to above are those that emerge when the effects of other relevant variables (IQ, parents' education, etc.) are statistically removed. Thus, there is something about participation in a particular program in itself, which contributes to differences in academic achievement. It may be that there are certain prior differences (in motivation, interest, etc.) among the students who choose to enter each program which are at least partly responsible for the differences in achievement. It may also be that there are aspects of the experiences and incentives which each program provides (and perhaps of marking procedures as well) which help to produce differences in academic achievement.

In addition to the student's academic program, the number of school activities in which he had participated while in high school is related to grades, for students of both races; the larger the number of school activities, the better the student's course grades (both for the "current" semester and cumulatively). Participation in school activities also is positively correlated with scores on standardized achievement tests, but these latter associations are not significant when other predictors are held constant.

For students of both races, both scores on standardized achievement tests (MAT) and grades are related also to the students' evaluations of their teachers. Evaluation of teachers was assessed by asking each student to estimate the proportion of their teachers whom he has had in this school who fit each of thirteen descriptions (e.g., have shown an interest in me, explain things so they are clear, are too strict in class). The more positive the students' overall evaluation of his teachers, the higher his achievement test scores and his grades. A positive evaluation of teachers makes a stronger contribution to predicting standardized achievement scores for Blacks than for Whites; the contribution of this factor to the prediction of grades is about the same for both races.

In addition to the school factors mentioned (program, participation in activities, and evaluation of teachers), a number of other factors bearing on the school situation make some contribution to predicting academic performance, though their effect is, in general, smaller and less consistent across racial lines and across performance measures.

For black students, perception of favoritism toward black students by school personnel is associated with somewhat lower scores on standardized achievement tests (MAT). Such perceptions are associated also with somewhat lower cumulative grades for the Blacks. On the other hand, perceptions by black students that school staff favor Whites helps to predict higher achievement scores (though not significantly higher grades) for Blacks. The tendency for academic performance to be lower among black students who see discrimination in their favor, is consistent with the results reported above, and discussed, in the section on academic effort.

For white students, perceptions of favoritism toward Blacks are associated with lower scores on standardized achievement tests (MAT), though not with grades. However, perceptions by white students of greater favoritism toward Whites also are associated with lower cumulative grades. Thus, there is a tendency for perceptions of favoritism of both kinds to be characteristic of white students with low academic performance.

Student perceptions of school strictness are associated with slightly lower student performance (when other things are held constant), especially for white students. Achievement scores (MAT), present-semester grades, and cumulative grades were all slightly lower for Whites who saw their schools as relatively strict. For black students, only cumulative grades are related to perceptions of school strictness (more strictness, slightly lower grades).

For white students, but not for black students, present-semester grades were slightly higher (other things equal) among those in higher school years. Cumulative grades were slightly higher among white students who perceived the academic standing of white students in their school, relative to black students, to be highest and among those who saw their school administration as being most responsive to student ideas.

Student Goals, Beliefs, and Interests

Separate regression analyses were performed in order to study the relationship between academic performance and students' goals, beliefs and interests. For these analyses, variations in the factors examined above (i.e., inter-racial contact, more objective student characteristics, home background and school situation) are not controlled. How is academic performance related to these "subjective" factors? The summary data are found in Table 4-2; detailed data are in Appendices A-4, A-6, A-8, and A-10.

Black Students. Among black students, the best overall predictor of academic performance (from among this set of "subjective" predictors) is the importance of academic goals to the students. The more important academic goals are to black students, the better their grades (both current semester and cumulative) and the higher their MAT scores. Having higher occupational aspirations is also related significantly to academic performance among black students--especially to NEDT achievement scores, and more weakly to grades.

Aside from the importance of academic goals, and the prestige level of occupational aspirations, none of the other subjective variables is related significantly to standardized achievement scores for Blacks (when other subjective variables are controlled). However, the grades of black students are higher among those students who see a greater chance to fulfill their educational aspirations and among those who have greater interest in their classes.

Academic performance among black students (i.e., grades or achievement scores) is not related significantly, when other subjective factors are controlled, to the following: a) perceived chance to fulfill one's occupational aspirations; b) clarity of occupational plans; c) the belief that "anyone black or white, can get ahead in this country if he tries hard enough."

In all, these data suggest that the academic achievement of black students is related more to the student's interest in, and perceived chance to do well in, school than it is to his perception of his chances to get ahead in the world of work. Those black students who do best academically do have higher occupational aspirations than other Blacks, but this seems to be related to their greater commitment ot education and not to a greater belief in being able to get ahead.[10]

Whites. Among white students, the best overall predictor of a student's academic performance is the level of his occupational aspirations. Higher occupational aspirations have an especially strong association with scores on both standardized achievement test batteries and are also related fairly strongly to students' grades. This pattern of associations between occupational aspirations and academic achievement is similar to, but stronger than, the associations for black students.

Several of the same factors which help to predict black students' academic performance are related similarly to the performance of white students. The more important academic goals are to students, the higher their grades and their MAT achievement scores. The better students see their chances to fulfill their educational aspirations, the better their grades and (unlike Black students) the higher their scores on both the MAT and NEDT achievement tests.

Also, like black students, the greater the interest of white students in their classes, the higher their grades.

In addition to the associations above which are generally true of students of both races, several subjective factors have a significant association with the academic achievement of white students only. Among Whites, the better chance students see to fulfill their occupational aspirations, the higher their grades, but the lower their MAT achievement scores. The greater the clarity of occupational plans of students, the lower their grades and their NEDT achievement scores.[11] Finally, the greater the belief of white students that anyone who tries hard enough can get ahead, the lower their NEDT achievement scores.

In general, these data indicate that for white students, as for Blacks, high academic achievement is related more to commitment to, and optimism with respect to, school goals than to the student's beliefs in the possibility of his being successful occupationally.

It should be noted that, for students of both races, the association between academic achievement and positive orientation toward school is probably not the result of a one-way causal process. When educational goals are important to the student and when he sees a good chance to reach these goals, he is likely to try harder and thus achieve more. On the other hand, doing well in school may lead students to adopt high educational goals and should also raise their expectations of being able to reach these goals. The associations found probably reflect both processes.

Summary of Determinants of Academic Performance

We will summarize the data on academic achievement by approaching the results in a slightly different way. Rather than asking (as we did above) how each set of factors (inter-racial contact, student characteristics, etc.) is related to several indicators of academic performance, we now ask: 1) What factors are most strongly related to grades, for students of each race; 2) What factors are most related to achievement scores, for students of each race; and 3) How much of the variance among students with respect to grades, and with respect to achievement scores is accounted for (in a statistical sense) by our total set of "predictors".

Grades--Blacks. Among black students, the best predictors of high grades, from among the primary set of predictors, are (in order of importance):[12] 1) being in the academic program; 2) grade school IQ score; 3) greater number of extra-curricular school activities; 4) positive evaluation of teachers; and 5) being in the Fine and Practical Arts program. The best predictors of high grades from among the second set of predictors (attitudes, expectations, and aspirations) are 1) greater importance of academic goals; and 2) perception of better chance to fulfill one's educational aspirations.

The total set of possible predictors accounts (in a statistical sense) for 29 percent of the variance in current grades and for 31 percent of the variance in cumulative grade averages among black students.[13]

Grades--Whites. For white students, the best predictors of high grades, from among the primary set of predictors, are (in order of importance): 1) being in the Academic program; 2) grade school IQ score; 3) positive evaluation of teachers; 4) being female; 5) greater overall satisfaction with life; and 6) being in more extra-curricular activities. Note that the most of the best predictors of grades--Academic program, IQ, number of activities, and evaluation of teachers--are the same for Blacks and for Whites.

The best predictors of high grades from among the second set of predictors (attitudes, expectations and aspirations) are, for white students: 1) greater importance of academic goals; 2) higher occupation aspirations; 3) perception of better chance to fulfill one's educational aspirations; and 4) less clarity about occupational goals. The first and third of these are also the best predictors of grades for Blacks.

The total set of possible predictors accounts for 48 percent of the variance in current grades and for 55 percent of the variance in cumulative grades among white students. This is much higher than the proportion of variance in the grades of black students which is accounted for by the same set of predictors.

Achievement Scores--Blacks. By far the best predictor of the standardized achievement scores of black students is the students' IQ scores, as measured toward the end of their grade school years (usually in the eighth grade). This fact indicates that the level of academically-related abilities which a student has by the time he finishes grade school (whatever the reasons for his level at that time) have a very major effect on his academic achievement level as measured in his Sophomore year in high school (the time that achievement tests were given).

Second in importance as a predictor of achievement scores among Blacks is the school program toward which students are oriented (or actually enrolled). Students in the Academic program have substantially higher achievement scores than those in the General program. Those in the Fine and Practical Arts program also have somewhat higher achievement scores than those in the General program. It should be noted again that the positive association between achievement scores and being in particular programs is independent of the effects of a variety of other predictors, including IQ scores. Aside from IQ score and school program, no other predictor was related substantially and significantly both to MAT scores and to NEDT scores for Blacks when other factors were controlled.[14]

For black students, all of the predictors together account for 65 percent of the variance in MAT achievement scores and the same percentage (65) of the variance in NEDT scores.

Achievement Scores--Whites. Among white students, as among Blacks, by far the best predictor of achievement scores is grade school IQ scores. Like Blacks, too, Whites in the Academic program scored substantially better on achievement tests than did those in the General program. (For Whites, being in the Fine and Practical Arts program did not significantly affect achievement scores). Also like Blacks, no other factors in the primary set of predictors, other than IQ and school program, had a substantial independent association with both achievement tests.

However, two additional factors did emerge from among the second set of predictors of White achievement scores. The most important of these is the (prestige) level of the occupation to which the student aspires. Higher occupational aspirations are associated with substantially higher MAT and NEDT achievement scores. In addition, white students who see a greater chance to fulfill their educational aspirations have somewhat higher achievement scores on both standardized tests.

For white students, the amount of variance in achievement test scores which is accounted for by all of our predictors taken together is rather impressive--80 percent of the variance in MAT scores and 78 percent of the variance in NEDT scores are accounted for by all predictors. As in the case of grades, more of the variance in White achievement scores than in Black achievement scores is accounted for by our predictors. Also, for both races, much more of the variance in achievement scores than in grades is accounted for by our predictors.

Educational and Occupational Aspirations

We turn next to a consideration of students' educational and occupational aspirations. What factors help us to predict how high a student will aspire? Detailed results bearing on this question are presented in Appendices A-11 through A-14. A summary of the main findings is presented in Table 4-4. What do these data show?

Inter-racial contact. Among black students, neither educational nor occupational aspirations are related significantly (when other factors are controlled) to any of our measures of contact with white students. This is true with respect to measures of the opportunity for contacts with whites in their high school, to the nature of contact with whites in their high school (e.g., amount of friendly interaction), and to the amount and the nature of contact with white people outside of their present school.

Among white students, several measures of contact with Blacks have a slight association with occupational aspirations. More friendly contact with Black people outside their high school is associated with slightly higher occupational aspirations while more unfriendly contact with Blacks in high school is associated with slightly lower occupational choices. However, occupational choices of white students are not related to a number of other measures of inter-racial contact, including opportunities for contact with Blacks, either inside or outside high school, or with the amount of friendly contact with black classmates in high school. Moreover, the educational aspirations of white students are not related significantly to any of the measures of inter-racial contact.

Overall, then, the data show no evidence that inter-racial contact is a determinant of the aspirations of black students. The data show little effect of inter-racial contact on white students, also, but do indicate slightly higher occupational choices among white students whose contacts with black students are more friendly.

While the educational and occupational aspirations of students are related little to inter-racial contact, such aspirations are associated more

TABLE 4-4. SUMMARY OF VARIABLES WHICH MAKE SIGNIFICANT CONTRIBUTION TO PREDICTING EDUCATIONAL AND OCCUPATIONAL ASPIRATIONS (DATA SHOWN ARE PARTIAL BETAS)

Regression Analysis I	Educational Aspirations		Occupational Aspirations[b]	
A. Inter-racial Contact	Black Students	White Students	Black Students	White Students
1. Amount friendly inter-racial contact outside this high school				.08*
2. Amount unfriendly inter-racial contact in this high school				-.07*
B. Students' Home Background				
1. Family concern about student's education and occupation	.13***	.17***		
2. Parents education		.11***		
3. Number of children in family		-.06*		-.06*
C. Student Characteristics				
1. IQ score (grade school)	.11**	.14***		.10**
2. Sex (high score =female)		-.09***		
3. Number of high school activities in which participated	.18***	.14***		.10**

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[a] High score on educational aspirations indicates student wants greater amount of additional education.

[b] High score on occupational aspirations indicates high prestige level of first occupation which student said he would like to enter.

TABLE 4-4 (cont.) SUMMARY OF VARIABLES WHICH MAKE SIGNIFICANT CONTRIBUTION TO PREDICTING EDUCATIONAL AND OCCUPATIONAL ASPIRATIONS (DATA SHOWN ARE PARTIAL BETAS)

	Educational Aspirations		Occupational Aspirations	
D. School Situation	Black Students	White Students	Black Students	White Students
1. Being in academic program	$.30^{***}$	$.41^{***}$	$.23^{***}$	$.35^{***}$
2. Being in fine and practical arts program	$.13^{***}$	$.11^{***}$		$.07^{*}$
3. Year in school	$.07^{*}$		$.08^{*}$	
4. Evaluation of teachers		$.07^{*}$		
5. Perception of school strictness		$-.05^{*}$		
Regression Analysis II Goals, Expectations and Interests				
1. Interest in classes	$.13^{***}$	$.11^{***}$	$.08^{*}$	
2. Importance of academic goals			$.15^{***}$	$.35^{***}$
3. Clarity of occupational plans	$.08^{*}$			
4. Perceived chance to fulfill occupational aspiration				$-.14^{***}$
5. Perceived chance to fulfill educational aspiration		$.08^{**}$		$.09^{**}$

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4-25

strongly with aspects of the school situation, with certain student characteristics, with some aspects of the students' home backgrounds, and with certain student attitudes and expectations.

School Situation.

The single best predictor of both educational and occupational aspirations is the student's position in (or orientation toward) a particular school program. In particular, students of both races who were in the Academic program had substantially higher aspirations than those in the General program (who were used as a standard of comparison). Students of both races in the Fine and Practical Arts (FPA) program also had somewhat higher educational aspirations than those in the General program and white students in the FPA program also made slightly higher occupational choices than Whites in the General program.

In addition to the formal school program, participation in extracurricular activities is also related to students aspirations. Among both black and white students, the greater the number of activities (clubs, teams, musical groups, etc.) in which the student participated in his present school, the higher his educational aspirations. Among white students, but not among Blacks (when other factors are controlled), greater participation in school activities is associated also with higher occupational aspirations.

Several other aspects of the school situation are also related significantly to aspirations, but less strongly. Among black students, both educational and occupational aspirations were higher among students in higher school years than in lower years. Among white students, educational aspirations were slightly higher among students who evaluated their teachers highly and slightly lower among students who perceived their schools as most strict.

Several types of perceptions of the school situation are not related significantly (when other relevant factors are controlled) to either the educational or occupational aspirations of students of either race. These nonrelated factors include: a) perception of the responsiveness of the school administration to student requests; b) perception of the relative academic status (grades. being in slow or fast classes) of Blacks and Whites in the school; c) perception of favoritism toward white students by school staff; and d) perception of favoritism toward white students by students by school staff.

Home Background.

Both for black and for white students, educational aspirations were higher where family concern about the student's future career (i.e., his future education and occupation) was greater. Also, educational aspirations were higher among white students whose parents had more education but among black students, educational aspirations are not related to parent's education (when other predictors are held constant). Among white students, a larger number of children in the family is associated with slightly lower aspirations, with respect both to future education and to occupational choice.

The number and identity of the adult(s) with whom the student lives (e.g., whether only the mother is present) is not related to aspirations of students of either race. Nor (other thing constant) is the family's amount of concern about the student's school work.

It may be noted also that while home background factors make a contribution to predicting educational aspirations, especially among white students, home background has very little association with the prestige level of occupational choices. None of the home background factors assessed was related significantly to the occupational aspirations of black students (when other factors are controlled) and only one weak association of a home background factor (number of children in the family) with occupational choice occurs among white students.

Student Characteristics.

Of the various student characteristics considered, IQ score was associated most strongly with students' aspirations. Both among black and among white students, the higher the student's IQ score, the higher his educational aspirations. It may be noted that since IQ scores are related to grades (see previous section on performance), those students with higher IQ scores generally are achieving higher grades and so have more reason than others to be encouraged to go further in school. White students who have higher IQ scores also choose occupations of higher prestige. Among black students however, IQ scores and occupational aspirations are not associated significantly (when other relevant factors are controlled).

The only other personal characteristic which we found related to aspirations is the student's sex. Among white students, boys had somewhat higher educational aspirations than did girls. There was not, however, a significant difference between white boys and girls with respect to the prestige level of occupational aspirations. Among black students, no significant differences between the sexes was evident with respect either to educational **hopes** or the prestige level of occupational aspirations.[15] (It is possible, however, that the prestige of occupations chosen by boys and girls differs within similar broad occupational categories--e.g., boys may tend to choose more prestigeful occupations within the professional category. Our coding of occupations was not detailed enough to check this possibility.)

A number of other personal characteristics show no significant association (when other factors are controlled) to either educational or occupational aspirations, for students of either race. Those "non-relating" factors include: 1) the student's degree of initial preference for his present high school; 2) the amount of time the student spent helping his family around the house; 3) the amount of time the student spent working at a paid job; 4) the amount of unfriendly interaction the student reported with schoolmates of his own race; and 5) the students overall satisfaction with his present life circumstances.

Goals, Beliefs, and Interests

In a separate regression analysis, students' educational and occupational aspirations were related to their personal goals, beliefs, and interests. Among the specific factors considered in this set, the student's interest in his classes is the best predictor of his educational aspirations (more interest, higher aspiration); this is true for students of both races. For black students, greater interest in classes also contributes slightly to higher occupational aspirations.

The strongest predictor (in this set) of students' occupational aspirations is the importance of academic goals (i.e., getting good grades, getting a good education, being able to go to college). The more important the student indicated such goals to be for him, the higher the prestige level of the occupation he said he would like to enter. The association is especially strong among white students but also is clearly apparent among black students.

The data presented so far in this section indicate that the aspirations of students of both races are related to their academic interests and goals. One may also ask the extent to which aspirations are affected by students' perceptions of their chances to reach ambitious goals. We asked students to indicate their degree of agreement with the statement "Anyone, whether black or white, can get ahead in this country if he tries hard enough." For students of both races, neither educational nor occupational aspirations are associated significantly (other things being equal) to this general belief in the possibility of mobility. However, we cannot tell from our data the extent to which the individual's educational or occupational choices result from his assessment of his own personal chances to reach various possible goals. We do know, as indicated above, that the student's grade averages have only modest correlations with educational aspirations and small correlations with occupational aspirations and that the correlations between grades and aspirations are smaller for black students than for white students. Although chances to succeed educationally and occupationally depend on more than grades, the low correlations between grades and aspirations seem to indicate that many students hold educational and occupational aspirations which they are not likely to be able to fulfill.

We did ask several questions about the student's perception of his chances to a) go as far in school as he would like, and b) to get the kind of job he mentioned he would like to do. However, since these questions refer to the student's chances to fulfill his stated aspirations, they cannot be considered as determinants of such aspirations. Perceptions of chances to reach one's stated goals were not related significantly to the aspirations of black students. The educational aspirations of black students were slightly higher among those who were most decided about their occupational plans. Among white students, those with higher occupational aspirations perceived somewhat poorer chances to fulfill their occupational aspirations but slightly better chances to reach their educational goals, than students who chose occupations of lower prestige. White students with higher educational aspirations also perceived slightly higher chances to reach their educational goals.

Summary of Results Concerning Aspirations

We may summarize our results by reviewing first those factors which are related most strongly to educational aspirations and then reviewing those related most strongly to occupational aspirations.

Educational Aspirations

Among students of both races, being enrolled in certain school programs (or planning to take courses of that type) is related most strongly to educational aspirations. Being in the Academic program is an especially good predictor of educational aspirations and students in the Fine and Practical Arts program also aspired to go farther educationally than those in the General program.

Several student characteristics also are especially helpful in predicting educational aspirations among both Blacks and Whites. For students of both races, those who participated more in school activities and those with higher (grade school) IQ scores wanted more further education than did other students. Among white students (but not among blacks), the higher the parents' educational level, the higher the educational aspirations of the students. But among students of both races, more reported family concern about the student's future education and occupation was associated with higher educational aspirations by students.

With respect to inter-racial contact among students, the results show no significant associations between such contact and educational aspirations, for students of either race (when other relevant factors are controlled).

A separate analysis concerning the role of various student interests and expectations indicates that, both for black and for white students, those students who had more interest in their classes had higher educational aspirations.

The entire set of predictors (combining those from both analyses) accounts for 46 percent of the variance in educational aspirations among white students and for 23 percent of the variance among black students.

Occupational Aspirations

As with educational aspirations, the best predictor of high occupational aspirations is being in (or oriented toward) the Academic program. For black students, no other factors--including all of those bearing on inter-racial contact, home background, and personal characteristics--are related strongly to occupational aspirations and only one (year in school) has even a statistically significant association after other factors are controlled. Among white students, a number of factors other than being in the Academic program had modest associations with occupational aspirations. The strongest of these associations indicates that white students who participated more in school activities and those with higher IQ scores had somewhat higher occupational aspirations. Inter-racial contact has only small associations with the occupational aspirations of white students and does not help significantly to predict the aspirations of black students.

A separate analysis concerning the effect of student interests and expectancies showed that, among students of both races (but especially among Whites), higher occupational aspirations were found among those for whom academic goals were most important.

Our entire set of predictors accounts for 28 percent of the variance in occupational aspirations among white students but only 11 percent of the variance in occupational aspirations among black students.

Opinion Change

To what extent is inter-racial contact, as well as other factors, associated with change in opinion toward other-race people? To assess opinion change among the students, we must rely on answers to the single question, "Since coming to this school, has your opinion of most (other-race) people gotten worse, gotten better, or stayed the same?" Students checked one of five answers ranging from "gotten much better" to "gotten a lot worse". (See Chapter 2, for a description of the responses, by school and by race.)

To study the possible determinants of opinion change, we used a different set of possible predictors than were used for prediction of academic achievement, academic effort, and student aspirations. These predictors (listed in Appendices A-15 and A-16) fell into four groups:

1. Inter-racial contact
   a. Opportunity for inter-racial contact
   b. Amount and nature of inter-racial interaction
2. Conditions of inter-racial contact
   a. As assessed objectively
   b. As perceived by students
3. School factors
4. Student characteristics

Four separate regression analyses were performed for students of each race. All of these analyses included as predictors the same school factors and student characteristics but differed with respect to the measures of inter-racial contact (1a or 1b) and with respect to measures of the conditions of inter-racial contact (2a or 2b).

The results of two of these regression analyses are shown in Appendices A-15 and A-16.[16] A summary of the significant relationships which we found in all four analyses is presented in Table 4-5.[17] What do these data show about the factors which are associated with change in opinion toward other-race people?

Inter-racial Contact

Among white students, greater opportunity for contact with black schoolmates is associated with a modest improvement in opinions about black people. This is particularly true with respect to opportunity for in-class contact but greater inter-racial contact around school (cafeteria, gym lockers, hall lockers) also is associated with improvement in racial attitudes (in one of the two relevant analyses). Among black students, there is very little association between the opportunity for contact with Whites in high school and changes in evaluation of white people. For students of both races, opportunity for contact with black faculty members was not associated significantly with change in opinion about the other race (with other factors controlled).

While there is, especially among white students, a general tendency for racial opinions to improve as opportunities for contact with other-race schoolmates increase, the nature of the actual experiences which students have with

TABLE 4-5. SUMMARY OF VARIABLES WHICH MADE SIGNIFICANT CONTRIBUTION TO PREDICTING CHANGE IN OPINION TOWARD OTHER RACE[a] (DATA SHOWN ARE PARTIAL BETAS FROM FOUR REGRESSION ANALYSES)[b].

	Black Students		White Students	
A. Opportunity for Contact	Regression I	Regression II	Regression I	Regression II
1. In classes			.12**	.08*
2. Around school			.08*	
B. Inter-racial Interaction	Regression III	Regression IV	Regression III	Regression IV
1. Friendly contact with other-race students	.13***	.09*	.28***	.18***
2. Unfriendly contact with other-race students	-.13***	-.08*	-.32***	-.21***
C. Objective Conditions of Inter-racial Contact	None of the objective conditions of inter-racial contact are significant predictors of opinion change in either Regression I or Regression II			
D. Perceived Conditions of Inter-racial Contact	Regression II	Regression IV	Regression II	Regression IV
1. Positive racial attitudes of own-race schoolmates	.23***	.22***	.34***	.30***
2. Positive attitudes of own-race teachers toward inter-racial contact	.11**	.09		

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[a] Higher score indicates more positive opinion change.

[b] Regression I includes variables bearing on opportunities for inter-racial contact, objective conditions of contact, school situation, and student characteristics (see Appendix A-15). Regression II differs from Regression I in that perceived conditions of contact are substituted for objective conditions of contact. Regression III differs from Regression I in that types of inter-racial interaction are substituted for opportunities for contact. Regression IV includes variables bearing on types of inter-racial contact, perceived conditions of contact, school situation, and student characteristics (See Appendix A-16).

*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

TABLE 4-5. SUMMARY OF VARIABLES WHICH MADE SIGNIFICANT CONTRIBUTION TO
(cont.) PREDICTING CHANGE IN OPINION TOWARD OTHER RACE
(DATA SHOWN ARE PARTIAL BETAS FROM FOUR REGRESSION ANALYSES)

	Black Students		White Students	
	Regression II	Regression IV	Regression II	Regression IV
3. Extent other race facilitates reaching own goals	$.10^{**}$	$.09^{*}$	$.16^{***}$	$.10^{*}$
4. Power of black students, relative to white students			$-.10^{**}$	$-.08^{*}$
5. Favoritism by staff toward black students	$.17^{**}$	$.17^{**}$		
6. Academic status of white students, relative to black students			$-.14^{***}$	$-.11^{**}$

E. School Situation	Regr. I	Regr. II	Regr. III	Regr. IV	Regr. I	Regr. II	Regr. III	Regr. IV
Attending School 9						$.10^{*}$		$.09^{*}$
Attending School 7						$.09^{*}$		$.08^{*}$
Attending School 10								$.10^{*}$
Attending School 5					$-.10^{*}$			
Attending School 6					$-.13^{**}$			
F. Student Characteristics								
1. Preference for other high school prior to attending present school	$-.16^{***}$	$-.14^{***}$	$-.16^{***}$	$-.13^{***}$				
2. Positive opinion of other-race prior to high school				$-.08^{*}$	$-.08^{*}$	$-.23^{***}$	$-.16^{***}$	$-.25^{***}$
3. Sex (high score= female)					$.07^{*}$			

these schoolmates is more crucial than mere opportunity for contact. More experience of friendly contact with other-race schoolmates is associated with fairly marked improvements of racial attitudes, especially for white students. On the other hand, more reported experiences of unfriendly behavior by other-race students toward oneself is associated with about equally large negative changes in opinions of the other race. Again, this is especially true among white students, though the effect is significant among Blacks as well.

These data confirm that mere mixing of races does not necessarily produce favorable attitude change. The key is the type of interaction which occurs. In an earlier report (Patchen and Davidson, with Hofmann and Brown, 1973) we have presented our preliminary findings concerning factors which affect the level of avoidance, of friendly interaction, and of unfriendly interaction between students of different race.

Conditions of Inter-racial Contact

We have seen that the opportunity for, and nature of, inter-racial contact in high school is associated with changes in opinion toward the other race. But how about the conditions under which such contact occurs? We will present next available data concerning associations between opinion change and the following conditions: 1) racial attitudes of same-race peers; 2) racial attitudes of other-race peers; 3) racial attitudes of same-race teachers; 4) relative socio-economic status; 5) relative academic status; 6) compatibility of goals; 7) relative power; and 8) favoritism by school personnel toward one race.

As noted above, some of the information relevant to these conditions of inter-racial contact is relatively objective; other data represents the perceptions of the students. In discussing the results, we will describe briefly the way in which the more objective measures were obtained but will not describe here the perceptual measures in any detail. More detailed information about these perceptual measures may be found in Appendix B of our earlier report (Patchen and Davidson, with Hofmann and Brown, 1973).

Racial Attitudes of Same-Race Peers. To provide an objective indicator of the racial attitudes of same-race peers, we computed for each student the average ethnocentrism scores of his same-race peers--i.e., those in his same school, same year, and same sex.

The measure of ethnocentrism (see Appendix B of the earlier report) assesses beliefs in the desirability of maintaining social distance from other-race people, in the moral superiority of one's own race, and in a militant stance with respect to relationships with the other race. Results from the present analyses show that, for students of both races, this measure of the racial attitudes of same-race peers was not related significantly to change in opinion toward the other-race (when other predictors are held constant.) However, for students of both races, perceptions that same-race peers have more favorable attitudes toward other race students is associated fairly strongly with more positive change in opinion toward the other-race.

There are a number of possible reasons why our measure of perceptions of same-race attitudes is related to opinion change while our objective measure of same-race attitudes is not so related. First, the perceptual measure may reflect the attitudes of the smaller number of students who are closest to each student, as compared to the larger number of same-sex students in his school and year whose opinions are reflected on the objective measure. Secondly, it may be that perception of the reality is simply more important than the reality. Third, it may be that perceptions of peer attitudes are often distorted to fit one's own attitudes (and opinion change). Finally, it may be that our perceptual measure of racial attitudes is more relevant to the school situation than is our objective measure of peer ethnocentrism; the former concerns beliefs about racial matters in general (not specifically school) while the perceptual measure is concerned directly with attitudes toward other-race schoolmates. Whatever the explanation of the results, perception of peer racial attitudes is one of the factors most strongly related to opinion change.

Racial Attitudes of Other-Race Peers. Our objective measure of the racial attitudes of other-race peers parallels the measure for same-race peers. It indicates, for each student, the average ethnocentrism scores of students of the other race, who are in his same school and his same year and are of the same sex. As with the similar measure of same-race racial attitudes, this measure of the racial attitudes of other-race peers has no significant association with change in racial opinion by students of either race.

No measure of the perceived racial attitudes of other-race students was included in the present analyses. However, such a measure was included in a similar analysis done for another portion of our research program. Results from that analysis show that, for students of both races, the perceived racial opinions of other-race schoolmates was not related to change in opinion toward other-race persons. Thus, it appears that it was the perceived racial opinions of the student's *own-race*, rather than other-race, schoolmates, which is related to opinion change.

Relative Socio-Economic Status. To assess objectively the socio-economic status (SES) of each student, relative to other-race peers, we computed the difference between his score on SES[18] (i.e., parents educations and occupations) and the average SES score of other-race students in his same school and same year. The results show that the relative SES of students (of either race) has no significant association with opinion change (other factors controlled). In addition, perceptions by students of the relative proportions of black students and of white students in their school who "are from low income families" are not related (other things equal) to change in opinion toward the other race. Thus, these data indicate that the relative SES of black and white students--either as objectively assessed or as perceived by students--is *not* related, in itself, to change in opinion of the other race in these racially integrated high schools.

Relative Academic Status. Our measure of the academic status of each student, relative to other-race peers, is the difference between his (cumulative) grade average and the mean grade average of other-race students in his school and his year. This indicator of relative academic status shows no significant associations with opinion change (when other factors are controlled). However, white students' *perceptions* of the relative academic status of white and black students in their school is associated with changes in their opinions toward black people. The more difference in favor of their own race which white students saw, with respect to grades and to placement in slow or accelerated classes, the more negative their opinions of Blacks became. The less the academic gap perceived by white students, the more positive their opinion changes. Black students' perceptions of the relative academic status of Black and Whites in their school were not related significantly to changes in opinion about white people.

Compatibility of Goals. Two indicators of the compatibility of goals between black and white students were included in these analyses. The first--a relatively objective measure--is the number of classes the student reported attending during the current semester in which the class was divided into teams or small groups and in which the students was part of an inter-racial group. This measure was intended to assess the student's experience with cooperative inter-racial activities in the classroom.[19]

The second relevant measure assesses the student's perceptions of the extent to which students of the other race in his school facilitate or hinder his attainment of various personal goals in school (getting good grades, getting a good education, having good school teams, getting changes in the school which he'd like to see, etc.).

The results show first that the number of classes in which the student participated in racially mixed sub-group activities is not related significantly to opinion change with respect [illegible] the other race (other things equal). However, for students of both races, perceptions by students of greater facilitation and less hindrance by other [illegible] students with respect to school-related goals is associated with more positive opinion change.

Again it is not clear why the objective indicator of cooperative inter-racial activities in class shows no association with opinion change while the broader perceptual measure of goal facilitation does show an association with opinion change. It may be that inter-racial subgroupings in class during the "present" semester is not associated with opinion change since entrance into high school because the relevant time periods differ. Also, it may be that the mere division of classes into racially mixed sub-groups does not necessarily result in cooperative effort toward joint goals. There may be further splintering along racial lines within sub-groups; the tasks may not be of sufficient interest or duration to engage students in sustained cooperative effort; or competition among students within sub-groups may arise. In any case, the data do indicate that positive opinion change is more probable when students perceive that other-race students facilitate the achievement of their personal goals.

Relative Power. Among white students, percpetions of greater power of black students in their school, relative to white students, is associated with a negative change in opinions of Blacks. Among black students, perceptions of the relative power of the two racial groups in the school are not related significantly to changes in opinion of white people. Since the relative power of the two races is relevant at a group level, rather than an individual level, no objective measure of the relative power of the individual student was used in this analysis. (See Chapter 3 for data concerning objective measures of relative power at the school level.)

Favoritism Toward One Race. We have no objective data concerning favoritism which teachers and other school personnel might show toward students of one race or the other. However, among black students, perceptions of more favoritism toward their own race by school personnel (usually predominantly White) are associated with more positive changes in opinion toward white people. On the other hand, perceptions by Blacks of favoritism toward White students tends to be associated with more negative opinion change toward the Whites, although this association does not reach statistical significance when other factors are controlled.

Among white students, perception of favoritism in either direction (toward Whites or toward Blacks) has little association with opinion change. Thus, perceptions of favoritism appear to have a greater impact on racial opinion change among black students than among white students.

School Position.

In addition to the effects on opinion change of inter-racial contact, and of the conditions of inter-racial contact, we wished to see whether attendance at a particular school might be related to change in opinion toward other-race people. The results show that, among black students, opinion change toward Whites was not associated significantly with attendance at any particular school, when other factors relevant to opinion change are held constant. However, among white students, attendance at several particular schools appeared--in one or more of the regression analyses--to make either a positive or negative contribution to opinion change. Attendance at School 9, School 7, or School 10 contributed to more positive change in opinion toward Blacks. As the data in Chapter 2 indicate, this does not mean that these schools had the greatest ratio of favorable to unfavorable opinion change--though all three of these schools had a net favorable change. Rather, it indicates that, after the effects of other relevant variables are taken into account, attendance at these schools made an independent contribution to positive opinion change. On the other hand, attendance at School 6 or School 5 made independent contributions to negative opinion change among white students, in one of the regression analyses. As data presented in Chapter 2 show, Schools 6 and 5 were the only schools where there was a clear preponderance of negative opinion change among white students.

Why did attendance by Whites at some bi-racial schools seem to contribute to positive change in opinions of black people while attendance at other bi-racial schools contributed to negative opinion change? While we cannot answer this question with certainty, there are some clues in other results from our analyses. First, our analyses indicate that attendance at Schools 7, 9, or 10 did not contribute to positive opinion change when we hold constant the total set of objective conditions of contact. (See Appendix A-15 for a list of measures of objective conditions of contact.) This indicates that the total set of objective conditions of contact at these three schools was conducive to positive opinion change among white students.

Secondly, our analyses indicate also that attendance at Schools 6 or 5 did not contribute to negative opinion change among Whites when we hold constant the nature of inter-racial contact (i.e. friendly or unfriendly) and/or the perceived conditions of inter-racial contact (see Appendix A-16 for a list of perceived conditions.) These results indicate that it was less positive interaction and less favorable perceived conditions of contact at Schools 6 and 5 which contributed to the unusual amount of negative opinion change at these schools.

The associations between the average level of opinion change at a school and various characteristics of the school and its student body are reported in Chapter 3. The data reported there indicate that certain conditions of inter-racial contact--especially the racial norms of the student body--are related appreciably to opinion change among Whites.[20] These data suggest also the importance for average White opinion change of the following: 1) rapidity of change in the racial composition of the student body; 2) difference in the proportions of Blacks and Whites in the Academic program; 3) the amount of friendly inter-racial contact which students have had outside of high school; 4) the proportion of students who come to school by bus; 5) difference in Black and White participation in extra-curricular activities; and 6) student perceptions of, and feelings toward, other-race schoolmates.[21] These are the kinds of inter-school differences which may affect the amount and conditions of inter-racial contact experienced by individual students and, thus, lead to variations in average opinion change across schools.

Several other factors having to do with the student's position in school are not related significantly (other things controlled) to change in opinion toward the other race. These factors are: 1) the school program in which the student is enrolled (or toward which he is oriented)--i.e., whether Academic, Vocational, Fine and Practical Arts, or General; and 2) the student's year in school, from freshman to senior.

Student Characteristics.

Finally, we may consider the relationship of opinion change to several student characteristics. Among black students, those students who had less preference for their present high school prior to attending changed their opinion of Whites less positively than those black students who attended the high school they preferred. Prior preference among high schools did not have a significant effect on opinion change among white students.

Among white students, more positive racial opinion prior to high school is associated with less positive opinion change during high school. Among black students, there is a similar relationship in one of the regression analyses, but this association is not consistent across analyses and less strong than that found for white students. The fact that more positive prior opinion of the other race contributes to less positive change in high school may reflect, in part, the fact that those who were more positive to begin with had less "room" than others to move in a further positive direction. It may also reflect in part a kind of "sobering" effect of high school inter-racial experiences on some students who may have come with unrealistic expectations of near-perfect behavior by other-race students.

One other student characteristic for which there is some evidence of association with opinion change is sex. One of the analyses shows that, among Whites, being female made a slight contribution to more positive opinion change. Sex is not related significantly (other things equal) to opinion changes among black students. Finally, among students of both races, greater participation in school activities, although related to more friendly racial interaction (Patchen and Davidson, 1973), is not related appreciably to change in opinion toward the other race.

Summary of Results on Opinion Change

We now summarize the major finding's concerning changes in opinion toward other-race people.

First, opinion change is related to inter-racial contact. In general, greater opportunity for such inter-racial contact leads to somewhat more favorable inter-racial attitudes, especially among white students. But the direction of opinion change is affected more strongly by the type of inter-racial contact which occurs in high school; more friendly contact is associated with considerably more positive attitudes while more unfriendly contact is associated with more negative attitudes.

The conditions under which inter-racial contact occurs--as perceived by the students--also has an important impact on change in racial opinions. Most notably, for both races, the more students see schoolmates of their own race as having positive attitudes toward other-race people, the more positive are their own opinion changes. Also, for students of both races, the more students saw other-race schoolmates as facilitating, rather than hindering, achievement of their personal goals in school, the more positive their opinion change.

Among white students, attendance at Schools 9, 7, or 10 contributed to positive opinion change while attendance at School 6 or School 5 contributed to negative opinion change. These effects of particular schools seemed to be due especially to differences in the conditions (objective and perceived) under which inter-racial contact occurred in particular schools.

Finally, several student characteristics were associated significantly with change in opinion toward other-race people. Most notably: Among black students, those who had low preference for their present high school, prior to going there, changed their opinions of white people less positively than did others since coming to high school. Among white students especially, having more positive opinions of the other race prior to high school contributed to less positive opinion change during high school.

The entire set of predictors used in our analyses accounts for 33 percent of the variance in opinion change among white students but only 16 percent of the variance among black students.[22]

Overall Summary and Conclusions

In this chapter, we have considered the associations between each of a number of "outcomes" in the school and each of several sets of factors which may help to account for variations in each outcome. These sets of possible explanatory factors are: a) inter-racial interaction, b) student characteristics; c) home background; d) school situation; and e) student goals, beliefs, and interests. What overall conclusions can we draw about each of these sets of explanatory factors?

Inter-racial Interaction.

Despite the considerable attention given to inter-racial contact in this study, our results generally indicate little association between such contact (its amount and nature in various school and non-school settings) and most of the school outcomes of interest to us. For black students, there are no significant associations (other factors controlled) between inter-racial contact measures and a) academic effort; b) educational aspirations; or c) occupational aspirations. More inter-racial contact is associated with slightly lower grades for black students. With respect to Black scores on standardized achievement tests, there is some evidence of higher scores among black students with more inter-racial contact around high school (outside class); but this association is not large and most of our measures of amount and nature of inter-racial contact show little association with Black achievement scores.

We do know from our descriptive data that black students' opinions of white people generally changed in a positive direction during high school. However, such change was not related significantly (other things equal) to amount of opportunity for inter-racial contact. Rather, the direction of opinion change depended on the amount of friendly or unfriendly contact with white schoolmates which black students experienced. The fact that opinion change among Blacks was predominantly positive indicates that friendly inter-racial contacts were more frequent than unfriendly contacts. [This inference is supported by descriptive data presented in our earlier report (Patchen and Davidson, with Hofmann and Brown, 1973)].

Among white students, too, most of the educational outcomes were not related appreciably to inter-racial contact. There is a tendency for greater inter-racial contact to be associated with lower grades and achievement scores among Whites, but these associations are quite small and their direction is not completely consistent. Particular aspects of inter-racial contact also have a few statistically significant associations with academic effort and with occupational aspirations but, again, these associations are quite small and not consistent in direction. The only outcome to be related appreciably to inter-racial contact among Whites is opinion change. In general, greater opportunity for inter-racial contact in high school--especially in class--is associated with more positive opinions toward black people. However, opinion change depends much more strongly on the nature of the contact with black schoolmates (friendly or unfriendly) than it does on sheer opportunity for contact.

Overall, then, these data indicate that the amount and nature of inter-racial contact had little association with the effort, academic performance, or aspirations of students of either race. However, inter-racial contact--particularly the nature of such contact--had a considerable impact on racial attitudes, especially among Whites. The direction of opinion change depended on whether inter-racial contact was friendly or unfriendly. (As noted earlier, more students of both races--but especially Blacks--changed in a positive rather than a negative direction).

Our findings of relatively little association between inter-racial contacts and certain outcomes (e.g., achievement and aspirations) does not mean necessarily that inter-racial contact may not affect these outcomes under certain circumstances. For example, greater inter-racial contact may affect achievement scores of black students most in schools of certain composition with respect to socio-economic background of students, or among students in certain school programs, or among students of a given IQ level. It may be, too, that a further specification of the kinds of inter-racial contacts which occur is needed. For example, achievement scores of black students may be affected most when they have fairly intimate friendships with schoolmates (white or black) who are very academically oriented. We plan to investigate further in later analyses the specific circumstances under which inter-racial contact may have more or less effect on such outcomes as effort, achievement, and aspirations. Whatever the outcomes of these further analyses, the present data indicate that--for our sample as a whole--variations in amount and nature of inter-racial contact is important primarily for racial attitude change and much less important as a determinant of effort, academic performance, and aspirations.

School Situation.

Whereas most school outcomes were not related strongly to inter-racial contact, most outcomes were associated more strongly with other aspects of the school situation. Most notably, a variety of outcomes--effort, grades, achievement scores, and aspirations--were markedly higher for students in the Academic Program (and somewhat higher for students in the Fine and Practical Arts program) than for those in the General program. These differences were found among students of both races. The fact that the differences among students in different programs are independent of a variety of home background factors, personal characteristics (including IQ), and other school factors, suggests that there is something about being in the Academic (or FPA) program (or in planning to take those kinds of courses) which leads to greater effort and higher academic achievement. In part, this may be due to students in those programs holding academic goals to be important and personally relevant to them. In part, it may result from different behavior and norms among teachers and peers of students in these programs, including, perhaps, greater expectation and encouragement of academic success.

Formal programs were being phased out of the Indianapolis high schools at the time of our study. However, such programs still exist in many school systems and may continue to exist informally in Indianapolis--in the form of sequences of courses which college-bound, vocationally-bound and other groups of students generally take. It seems important to learn more about the mechanisms which account for the positive effects of being in a particular program. It may be that other (formal or informal) school programs can be modified in ways--e.g., making the goals of the program more personally relevant, providing more success experiences--which will improve the effort and achievement of students in these other programs as well.

In addition to school program, several other school factors stand out as having especially strong and widespread associations with academic outcomes. One of these is students' evaluation of their teachers. The more positively students evaluated their teachers, the greater their academic effort, the higher their grades, the higher their standardized achievement scores (for Blacks) and the higher their educational aspirations (for Whites). One cannot be completely sure about causation here. It may be that students who try hard and get good grades in school (for whatever reason) then tend to evaluate their teachers more highly. But it seems plausible that the positive relationship between the teacher and the student contributes to the student's effort and achievement. This is not a new idea, of course, but it is instructive, nevertheless that, even when we adjust for the effects of a large number of home background factors, personal student characterisitcs, and other aspects of the school situation, the relationship between teacher and student still emerges as an important contributor to the students' effort and academic success. This result suggests the importance of continued, and perhaps increased, attention to building positive bonds between student and teacher, as a prerequisite to improving academic performance.

Another factor related appreciably to several outcomes is the number of school activities in which students participated. Among students of both races, the more activities, the higher the student's grades and the higher his aspirations, especially for further education. We cannot tell to what extent participation in school activities actually contributed to higher aspirations and better grades. It may be that participation in such activities--sports, musical groups, publications, clubs, etc.--provided many students with new stimulation and opened their eyes to new future possibilities. It may be also that students who participate more in school activities tend to have the kind of outgoing, energetic personalities that lead to higher grades and aspirations, apart from any specific effect of such activities. In any case, it seems clear that participation in school activities outside the classroom is not inconsistent with good academic work and may contribute positively to it.

Student Characteristics.

Among various student characteristics considered, IQ score (as measured in grade school--usually in the eighth grade) had by far the strongest and most widespread associations with academic outcomes in high school. Among all predictors (student characteristics and others) IQ score was the best predictor, for both races, of scores on standardized achievement tests. For students of both races also, IQ scores were associated relatively strongly with grades and with educational aspirations. As noted above, we view IQ scores not as a measure of "natural" intelligence (though IQ may be affected by genetic, as well as by other factors) but as a measure of the level of academically-related abilities at a given point in time. From this perspective, the data indicate that academic achievement in high school is affected powerfully by the level to which academically-relevant abilities are developed prior to high school.

Another personal characteristic which is related consistently to various school outcomes (though much less strongly than IQ) is the student's sex. Among students of both races, but especially among Whites, girls get higher grades than boys do. Among white students, girls also devote more effort to their schoolwork. However, boys of both races do somewhat better than girls on standardized achievement tests and white boys have somewhat higher educational aspirations than white girls. It may be that, while boys learn as much or more of the essentials in school, they are somewhat more rebellious against school requirements and/or have different interests than girls. It seems advisable for educators to keep alert to situations where boys are reacting in this fashion and to consider educational innovations designed especially to engage the interest and motivation of boys. On the other side, educators and others may want also to encourage higher educational aspirations among girls.

Home Background. In general, the home background of students exerted relatively little effect on their effort, academic success, and aspirations during high school. This is especially true for black students, among whom such factors as parents' education, family composition, and family concern about the student's school work, had remarkably little association with school outcomes. The only relevant association of any magnitude found among black students was that, as family concern about the students future education and occupation increased, the student's own educational aspirations rose. This was true among white students also. Among white students, in addition, parents' education made a consistent, though modest, difference. The higher parents' education, the higher the grades, standardized achievement scores, and educational aspirations among white students. Overall, although our data concerning home background are limited, they suggest that home background does not have a substantial impact on school outcomes, especially among black students. The key factors seem to be found instead among the students own characteristics, (especially the abilities he has acquired prior to high school) and among features of the high school situation.

Student Goals and Beliefs.

A separate set of analyses focused on the role of student goals, beliefs, and interests. We may summarize these results separately for black students and for white students.

For black students, the strongest and most consistent predictor in this set is the importance of academic goals (e.g., getting good grades, going to college). The more important black students rated academic goals, the greater their academic effort, the higher their grades and achievement scores, and the higher their occupational aspirations. In addition, greater interest in classes among black students was associated (though not as strongly) with similar outcomes--i.e., more effort, better grades, and higher aspirations for education and occupation.

Academic performance among black students also was related somewhat to the student's occupational aspirations. Aspiring to more prestigeful occupations was associated with a small increase in grade average and with a substantial increase on scores on one of the standardized achievement tests. However, differences in occupational aspirations among Blacks did not help to predict academic effort or scores on a second achievement test. Moreover, occupational aspiration was uniformly a much weaker predictor of effort and achievement among black students than it was among white students.

Some of our additional results bear on the idea that students' school behaviors may be affected by their expecations of success. In general, the data offer only very limited support for the importance of such expectations among black students. Perceptions by black students of better chances to go as far in school as they would like are associated with somewhat higher grades. But such perceptions of better educational chances do not help to predict academic effort, achievement scores, or aspirations. Nor are differences in perceived likelihood of getting the kind of job the student would like related, among Blacks, to differences in effort, grades, achievement scores, or aspirations.[23] Furthermore, black students' acceptance of the statement that "anyone, whether black or white, can get ahead in this country if he tries hard enough" is related to only one outcome--scores on one of the achievement tests--and that relationship is in a direction opposite to what would be predicted by an "expectation" hypothesis (greater acceptance of the statement is associated with lower achievement scores).

The general, then, the evidence concerning student goals and expectations indicates that academic effort, performance, and aspirations among black students seem to be related most to their having positive attitudes toward, and being personally committed to the goals of, education. These outcomes are less related to their occupational aspirations and only slightly related to their expectations about the likelihood of success in fulfilling their educational and occupational aspirations.

Turning to the results concerning the goals and expectations of white students, we may note some similarities to, and some differences form, the results for black studnets. As was the case for black students, the importance of academic goals to the student is a relatively strong and consistent predictor of effort, performance, and aspirations. As for black students, also, greater interest in classes helps to predict these positive outcomes for white students.

For white students, occupational aspirations is also an important predictor. Higher occupational aspirations is an especially strong predictor of high achievement scores, is also related fairly strongly to grades, and is related to academic effort as well. The associations of occupational aspirations with these academic outcomes are much stronger for Whites than for Blacks. There is, thus, greater consistency among Whites than among Blacks between their ideas about the kind of occupation they would like to enter and their school performance.

Regarding expectations about success, white students who see better chances to fulfill their educational hopes are consistently, though modestly, higher than others on a number of outcomes--grades, achievement scores, effort and aspirations. In general, the effect of perceived chances to fulfill one's educational aspirations is greater among Whites than among Blacks. However, as for Blacks, perceptions of chances to get the kind of job desired has little positive association, overall, with academic performance. Nor does degree of belief in the idea that anyone in this country can get ahead if he tries hard enough. Thus, positive academic outcomes for Whites appear to be related little to expectations about the possibility of long-range occupational success. Rather, they are related much more to the importance of educational goals, to the level of occupational aspirations, and somewhat to expectations about being able to go as far in school as one desires.

In general, then, the results for students of both races suggest that, while it may be helpful to make students see long-range occupational success as a realistic possibility, things which increase the interest and the importance of the more immediate school setting will have a greater impact on student motivation and performance.

Footnotes--Chapter 4

[1] The square of the correlation coefficient indicates the proportion of total variance in the outcome which is "explained" by the predictor.

[2] Somewhat different sets of predictors are used to try to account for racial opinion change. See section on opinion change later in this chapter.

[3] A high correlation may sometimes indicate that a predictor variable (A) has a strong non-spurious association with the dependent variable (B) even though the magnitude of its association (partial Beta) with the dependent variable becomes small when other predictors are controlled. This is because variable A may be correlated with variable C and both may have a causal effect on variable B. The variance in B which is jointly explained by A and C will not be reflected in the partial Betas. However, the methods used here do not permit us to distinguish that portion of a correlation which is due to joint effects from those due to spurious effects.

[4] Freshmen and Sophomores were not formally enrolled in a program at the time of our study but were asked about the kinds of courses they planned to take.

[5] Only students who were Freshmen or Sophomores during the 1970-71 school year (when most of our study data were collected) took the MAT tests. Only students who were Juniors or Seniors during the 1970-71 year took the NEDT tests. Students took achievement tests during their Sophomore years.

[6] Students who were Freshmen at the time our questionnaires were administered took MATs during the following year. However, it seems reasonable to expect that any differences in achievement due to the nature of experiences at the time of our questionnaire would be reflected in scores on the MAT during the next year.

[7] If one assumes that the experiences which students reported as Juniors and Seniors were generally similar to the ones they experienced in early years of high school, then one might expect to find an association between such later experiences and perceptions, on the one hand, and the grades and NEDT scores which students obtained earlier in high school. Also, some data collected in later years refers to characteristics (like sex or parents education) which remain constant, and to pre-high school experiences and traits (e.g., inter-racial contact in grade school, eighth grade IQ) which may affect high school achievement scores.

[8] IQ data for the great majority of students are scores on the California Test of Mental Maturity, taken during the fall semester of the eighth grade. A small number of students took other IQ tests, almost always in the sixth grade.

[9] There was no significant difference between the sexes on the standardized NEDTs, taken by earlier cohorts of Sophomores.

[10] Occupational aspirations among blacks are positively correlated with the value of academic goals (+.16) and with educational aspirations (+.34) but not with belief that anyone who works hard can get ahead (-.01).

[11] This result does not appear to be a result of those with more clear plans having lower occupational aspirations. The correlation for Whites is .03.

[12] The "importance" of a predictor is judged here by taking the partial Beta weight for each predictor with current grades, its partial Beta with cumulative grades and averaging the two. Those predictors which have a significant partial Beta of .10 or above with both grade measures are selected for mention as most important.

[13] Data for the total set of variables is for that set which includes various types of inter-racial interaction; results for the total set which includes variables bearing only on opportunity for inter-racial contact are closely similar.

[14] For both level of occupational aspiration and importance of academic goals, the partial Beta coefficients with both achievement scores are .10 or above for Blacks. However, in each case one of these coefficients is not statistically significant.

[15] Table 2-12 in Chapter 2 shows occupational choice, by race and sex. While choices of boys and girls differ considerably for some categories the occupational prestige level of choices by the two sexes is about equal with respect to the broad coding categories used.

[16] These two analyses include all of the variables used in all four analyses. Beta coefficients do not vary much when the same variables are included in combination with different sets of other variables.

[17] The Beta weights shown in Table 4-5 are taken from those regression analyses which included opportunities for inter-racial contact (rather than inter-racial interaction) and objective conditions of contact (rather than perceived conditions of contact). This is because we judged that perceived conditions of contact and inter-racial interaction might be variables intervening between contact opportunities, objective conditions, school situation, and student characteristics, on the one hand, and opinion change on the other hand. Therefore, it was not appropriate to control relationships by these intervening variables. The Beta weights for inter-racial interaction may have been reduced somewhat by the fact that the effects of interaction on opinion change are controlled by variables (e.g., school situation, student characteristics) which might affect interaction. However, inspection of the data indicates that the association between interaction and opinion change has not been reduced much by this procedure.

[18] The measure of socio-economic status used was a composite of scores based on parents' educations and parents' occupations. Where one of these pieces of information was missing, the total SES score was estimated on the basis of the other piece of information.

[19] Cooperative inter-racial activities take place in other-settings as well, of course, most notably in extra-curricular activities. Although we have data relevant to this matter, these data are not now in a form which permits us to know how much such experience each student had in extra-curricular cooperative inter-racial activities.

[20] The school-level data show also generally weak associations for the entire set of eleven schools between opinion change and the types of inter-racial contact experiences in high school. However, data presented in an earlier report show that friendly inter-racial contact was reported least often by white students at School 5 and that unfriendly contact was reported with second greatest frequency by white students at School 6. Less positive interaction may have contributed to negative opinion change at these schools.

[21] Our previous report presents descriptive data with respect to several of these school differences. These data show that Schools 6 and 5, where most negative opinion change occurred among Whites, had the most rapid changes in racial composition during the five-year period prior to our study and had the largest differences in proportions of White and Black students in the academic program. Schools 7, 9, and 10 were among the schools with the smallest differences in proportions of Blacks and Whites in the academic program.

[22] These proportions of variance accounted for are for the analyses which include measures of types of inter-racial interaction (rather than opportunity for contact) and measures of perceived conditions of contact (rather than objective conditions). Analyses using alternative sets of variables explain less of the variance.

[23] Our questions concerning the student's chances of going as far in school as he would like and getting the kind of job he would like referred to the aspirations that the student had indicated in previous questions. However, expectations about fulfilling one's aspirations, either educationally or occupationally, are related only very slightly to the level of these aspirations. Thus, results concerning expectations of success are not biased by differences in level of aspirations. However, it is possible that high expectations of fulfilling one's aspirations have a stronger association with such outcomes as effort and achievement when levels of aspirations are high than when they are low. We have not explored this possibility to date.

APPENDIX A-1 . EFFORT TOWARD ACADEMIC GOALS,[a] AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS' HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[b]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
A. Inter-racial Contacts				
1. Inter-racial contact outside this high school	$.08^{**}$	.01	-.03	-.02
2. Opportunity for inter-racial contact in class	$.12^{***}$	.04	-.01	.01
3. Opportunity for inter-racial contact outside class	$.07^{*}$	.05	.02	.01
4. Amount of friendly inter-racial contact outside this high school	$.09^{***}$	.03	.03	-.03
5. Avoidance of other-race students	$-.10^{***}$	-.01	$-.14^{***}$	$-.07^{*}$
6. Friendly contact with other-race students	$.07^{*}$	.00	.03	.03
7. Unfriendly contact with other-race students	$-.09^{***}$	.02	$-.10^{***}$	$.08^{*}$
B. Student's Home Background				
1. Parent's Education	$.10^{***}$	.01	.05	-.03
2. Number of children in family	$-.09^{***}$	-.05	-.05	-.05

---

[a] High score indicates greater effort toward academic goals (scale reversed).

[b] Two regression analyses were run. The first analysis included variables A1 through A3 (opportunities for inter-racial contact) plus all variables in sets B,C, and D. The second analysis included variables A4 through A7 (inter-racial interaction) plus all variables in sets B,C, and D. The Beta coefficients shown for variables in sets B,C, and D are those from the second regression analysis. N_s for correlations vary somewhat, the average being about 1550 for Blacks and about 1750 for Whites. Pairwise deletion of missing values was used for multiple regression

* Significant at .05 level; ** significant at .01 level; *** significant at .001 level.

APPENDIX A-1 (cont.) EFFORT TOWARD ACADEMIC GOALS,[a] AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS' HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[b]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
3. Living with mother only	.02	.01	-.06*	-.06*
4. Living with father only	-.05	-.02	-.06*	-.02
5. Living with parent substitute(s)	-.01	-.02	-.05	-.06*
6. Family concern about student's education and occupation	.11***	-.01	.16***	.04
7. Family concern with schoolwork	.13***	.08	.17***	.08*
C. Students' Characteristics				
1. Sex	.08**	.05	.26***	.19***
2. I.Q.	.19***	.08*	.14***	.00
3. Initial preference for other high school	-.09***	-.05	-.09***	-.06*
4. Time spent helping family	.15***	.11***	.17***	.12***
5. Time spent on job	-.03	-.01	-.11***	-.02
6. Unfriendly interaction with own-race students	-.17***	-.12***	-.17***	-.05
7. Satisfaction with life circumstances	.13***	.06	.25***	.10***
D. School Situation				
1. Being in Fine and Practical Arts program	.04	.10**	.01	.07*
2. Being in Academic program	.21***	.20***	.22***	.21***
3. Being in Vocational program	-.04	.03	-.02	.04
4. Year in school	.06*	.06	-.05	-.03
5. Evaluation of teachers	.19***	.16***	.30***	.16***
6. Number of activities in which participated	.17***	.07	.13***	.03
7. Perception of school strictness	-.04	.00	-.04	.01
8. Perceived administration responsiveness	.02	-.04	.14***	.01
9. Perception of academic status of Whites, relative to Blacks	.02	-.04	-.02	-.03

APPENDIX A-1. (cont.) EFFORT TOWARD ACADEMIC GOALS,[a] AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS' HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[b]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
10. Perception of favoritism toward Blacks in school	-.03	-.11*	-.04	-.05
11. Perception of favoritism toward Whites in school	.01	.15**	-.03	.02
Multiple Correlation (R)				
a) Variables A1-3 plus all B,C,D	R=.41***(R^2=.17)		R=.48***(R^2=.23)	
b) Variables A4-7 plus all B,C,D,	R=.41***(R^2=.17)		R=.49***(R^2=.24)	

APPENDIX A-2 . EFFORT TOWARD ACADEMIC GOALS, AS RELATED TO STUDENTS' GOALS, BELIEFS, AND INTERESTS[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
1. Prestige level of occupational aspiration	.03	-.03	$.23^{***}$	$.12^{***}$
2. Clarity of occupational plans	.03	-.01	.04	-.02
3. Perceived chance to fulfill occupational aspiration	$.08^{**}$	.06	$.06^{*}$	.02
4. Perceived chance to fulfill educational aspiration	$.09^{***}$	.04	$.14^{***}$	$.07^{*}$
5. Belief that anyone trying hard can get ahead	-.01	-.06	$.09^{***}$	.03
6. Importance of academic goals	$.25^{***}$	$.24^{***}$	$.36^{***}$	$.28^{***}$
7. Interest in classes	$.16^{***}$	$.12^{***}$	$.26^{***}$	$.17^{***}$
Multiple Correlation (R)	$.29^{***}$*R^2=.09)		$.44^{***}$(R^2=.19)	

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[a] N_s for correlations vary somewhat, depending on the number having valid scores on the particular variables; the average N_s are about 1600 for Blacks and about 1800 for Whites. Pairwise deletion of missing cases was used for the multiple regression.

*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-3 . METROPOLITAN ACHIEVEMENT TESTS COMPOSITE SCORES, AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS' HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
A. Inter-racial Contacts				
1. Inter-racial contact outside this high school	-.01	-.05	.03	-.06*
2. Opportunity for inter-racial contact in class	.13***	.04	-.04	.00
3. Opportunity for inter-racial contact outside class	.06	.09*	.01	.05*
4. Amount of friendly inter-racial contact outside this high school	-.03	-.05	.07	.03
5. Avoidance of other-race students	-.13***	-.02	-.12***	-.02
6. Friendly contact with other-race students	.04	.01	.15***	-.09**
7. Unfriendly contact with other-race students	-.16***	-.03	-.12***	-.04

---

[a] Two regression analyses were run. The first analysis included variables A1 through A3 (opportunities for inter-racial contact) plus all variables in sets B,C, and D. The second analysis included variables A4 through A7 (inter-racial interaction) plus all variables in sets B,C, and D. The partial Beta coefficients shown for variables in sets B,C, and D are those from the second regression analysis. N_s for correlations vary somewhat, depending on the number having valid scores on the particular variables. The average N_s are about 550 for Blacks and 650 for Whites. Pairwise deletion of missing values was used for the multiple regression analyses.

*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-3 . (cont.) METROPOLITAN ACHIEVEMENT TESTS COMPOSITE SCORES, AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS' HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
B. Student's Home Background				
1. Parents' Education	.14***	-.02	.46***	.13***
2. Number of children in family	-.09*	-.06	-.12***	.01
3. Living with mother only	-.06	-.05	-.10*	-.01
4. Living with father only	-.05	-.04	-.04	-.01
5. Living with parent substitute(s)	-.08*	-.02	-.01	-.01
6. Family concern about students education and occupation	-.02	-.01	.08*	.02
7. Family concern with schoolwork	.02	.01	.05	-.03
C. Students' Characteristics				
1. Sex	-.12***	-.09*	-.11**	-.12***
2. I.Q.	.74***	.60***	.83***	.66***
3. Initial preference for present high school	-.08*	-.01	-.09*	-.07**
4. Time spent helping family	.04	.00	-.08*	-.03
5. Time spent on job	-.09*	-.03	.01	.02
6. Unfriendly interaction with own-race students	-.08*	-.08*	.00	-.01
7. Satisfaction with life circumstances	-.01	-.06	.04	-.02
D. School Situation				
1. Being in Fine and Practical Arts program	.00	.10*	-.08*	.07**
2. Being in academic program	.44***	.28***	.61***	.21***
3. Being in vocational program	-.03	.04	-.15***	.02
4. Year in school	-.04	-.01	-.02	.02

APPENDIX A-3. (cont.) METROPOLITAN ACHIEVEMENT TESTS COMPOSITE SCORES, AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS' HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
5. Evaluation of teachers	$.16^{***}$	$.15^{***}$	$.19^{***}$	$.07^{*}$
6. Number of activities in which participated	$.21^{***}$	.04	$.39^{***}$	.03
7. Perception of school strictness	$-.09^{*}$	-.01	$-.15^{***}$	$-.08^{**}$
8. Perceived administration responsiveness	$.15^{***}$	.05	.07	-.02
9. Perception of academic status of Whites, relative to Blacks	$.18^{***}$	.02	$.14^{***}$	-.01
10. Perception of favoritism toward Blacks in school	$-.12^{***}$	$-.12^{*}$	$-.25^{***}$	$-.13^{**}$
11. Perception of favoritism toward Whites in school	-.06	$.15^{*}$	$-.17^{***}$	.06
Multiple Correlation (R)				
a) Variables A1-3, plus all B,C,D	$R=.80^{***} (R^2 = .64)$		$R=.89^{***} (R^2 = .79)$	
b) Variables A4-7, plus all B,C,D	$R=.80^{***} (R^2 = .65)$		$R=.89^{***} (R^2 = .79)$	

APPENDIX A-4. COMPOSITE SCORES ON METROPOLITAN ACHIEVEMENT TESTS, AS RELATED TO STUDENTS' ATTITUDES, EXPECTATIONS, AND ASPIRATIONS[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
1. Prestige level of occupational aspiration	.13**	.10	.42***	.39***
2. Clarity of occupational plans	.04	.01	-.08	-.09
3. Perceived chance to fulfill occupational aspiration	.05	.05	.09*	-.12**
4. Perceived chance to fulfill educational aspiration	.03	-.02	.18***	.10*
5. Belief that anyone trying hard can get ahead	-.05	-.07	-.04	-.05
6. Importance of academic goals	.15***	.13*	.23***	.11*
7. Interest in classes	.10*	-.07	.06	-.01
Multiple Correlation (R)	.21* (R^2=.04)		.48*** (R^2=.23)	

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[a] N_s for correlations vary somewhat, depending on the number having valid scores on the particular variables; the average N_s are about 600 for Blacks and about 650 for Whites. Pairwise deletion of missing cases was used for the multiple regression.

*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-5. COMPOSITE SCORES ON NATIONAL EDUCATIONAL DEVELOPMENT TESTS, AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
A. Inter-racial Contacts				
1. Inter-racial contact outside this high school	.07	-.04	-.08*	-.05
2. Opportunity for inter-racial contact outside class	.05	.07	.11**	.01
3. Opportunity for inter-racial contact in class	-.05	.08	-.03	.03
4. Avoidance of other-race students	-.06	.05	-.01	-.01
5. Friendly inter-racial contact outside this high school	.05	-.03	-.07	-.05
6. Friendly contact with other-race students	.12***	.02	.13***	.02
7. Unfriendly contact with other-race students	-.13***	-.05	-.05	-.05
B. Student's Home Background				
1. Parent's Education	.16***	-.00	.50***	.10**
2. Number of children in family	-.19***	-.04	-.21***	-.01

---

[a] Two regression analyses were run. The first analysis include variables A1 through A3 (opportunities for inter-racial contact) plus all variables in set B,C, and D. The second analysis included variables A4-A7 (inter-racial interaction) plus all variables in sets B,C, and D. The partial Beta coefficients shown for variables in sets B,C, and D are those from the second regression analysis. N_s for correlations vary somewhat, depending on the number having valid scores on the particular variables; the average N_s are about 450 for Blacks and 575 for Whites. Pairwise deletion of missing values was used for the multiple regression analyses.

*Significant at .01 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-5. (cont.) COMPOSITE SCORES ON NATIONAL EDUCATIONAL DEVELOPMENT TESTS, AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
3. Living with mother only	.04	.01	-.02	.01
4. Living with father only	-.11**	.03	-.10**	-.08**
5. Living with parent substitute(s)	-.00	-.01	-.06	.03
6. Family concern about student education and occupation	.02	-.06	.11**	.02
7. Family concern with schoolwork	-.03	.01	-.01	-.05
C. Student's Characteristics				
1. Sex	-.02	-.03	.05	.00
2. I.Q.	.73***	.55***	.82***	.65***
3. Initial preference for other high school	-.11**	-.02	-.08*	.00
4. Time spent helping family	-.04	.00	-.12***	-.03
5. Time spent on job	-.01	-.01	-.04	-.02
6. Unfriendly interaction with own-race students	-.04	-.01	.01	.02
7. Satisfaction with life circumstances	-.10*	-.01	-.00	-.04
D. School Situation				
1. Being in Fine and Practical Arts program	.11**	.14**	-.10*	-.01
2. Being in Academic program	.57***	.33***	.63***	.23***
3. Being in Vocational program	-.05	-.02	-.11**	-.04
4. Year in school	-.01	-.01	-.03	-.08**
5. Number of activities in which participated	.39***	.01	.50***	.06
6. Evaluation of teachers	.07	.04	.06	.02
7. Perception of school strictness	-.15***	-.02	-.13***	-.05
8. Perceived administration responsiveness	.10*	-.04	.08*	-.04

APPENDIX A-5. (cont.) COMPOSITE SCORES ON NATIONAL EDUCATIONAL DEVELOPMENT TESTS, AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
9. Perception of academic status of Whites, relative to Blacks	$.39^{***}$	.03	$.26^{***}$	.01
10. Perception of favoritism toward Blacks in school	$-.22^{***}$	-.01	$-.26^{***}$	.02
11. Perception of favoritism toward Whites in school	$-.16^{***}$	-.02	$-.22^{***}$	-.05
Multiple Correlation (R)				
a) Variables A1-3, plus all B,C,D	$R=.80^{***}(R^2 = .64)$		$R=.88^{***}(R^2 = .77)$	
b) Variables A4-7, plus all B,C,D	$R=.80^{***}(R^2 = .64)$		$R=.88^{***}(R^2 = .77)$	

APPENDIX A-6. COMPOSITE SCORES ON NATIONAL EDUCATIONAL DEVELOPMENT TESTS, AS RELATED TO STUDENTS' ATTITUDES, EXPECTATIONS, AND ASPIRATIONS[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
1. Prestige level of occupational aspiration	.21***	.20**	.42***	.37***
2. Clarity of occupational plans	-.06	-.11	-.10*	-.09*
3. Perceived chance to fulfill occupational aspiration	.07	.06	.09*	.08
4. Perceived chance to fulfill educational aspiration	.13**	.11	.24***	.16**
5. Belief that anyone trying hard can get ahead	-.07	-.08	-.19***	-.16***
6. Importance of academic goals	.11*	.10	.19***	.06
7. Interest in classes	-.04	-.06	-.06	-.05
Multiple Correlation (R)	.29** (R^2=.09)		.50*** (R^2=.25)	

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[a] N_s for correlations vary somewhat, depending on the number having valid scores on the particular variables; the average N_s are about 425 for Blacks and about 550 for Whites. Pairwise deletion of missing cases was used for the multiple regression.

*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-7 . CURRENT GRADES AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
A. Inter-racial Contacts				
1. Inter-racial contact outside this high school	-.01	-.07*	-.09***	-.09***
2. Opportunity for inter-racial contact outside class	.02	.04	-.01	-.02
3. Opportunity for inter-racial contact in class	-.06*	-.08*	-.06*	.04
4. Avoidance of other-race students	-.17***	-.06	-.12***	-.04
5. Friendly inter-racial contact outside this high school	.00	-.07	-.03	-.07*
6. Friendly contact with other-race students	.04	-.01	.05	-.00
7. Unfriendly contact with other-race students	-.16***	-.01	-.14***	.02
B. Student's Home Background				
1. Parent's Education	.02	-.04	.27***	.06*
2. Number of children in family	-.05	.04	-.14***	-.01

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[a] Two regression analyses were run. The first analysis included variables A1 through A3 (opportunities for inter-racial contact) plus all variables in sets B,C, and D. The second analysis included variables A4 through A7 (inter-racial interaction) plus all variables in sets B,C, and D. The partial Beta coefficients shown for variables in sets B,C, and D are those from the second regression analyses. N_s for correlations vary somewhat, depending on the number having valid scores on the particular variables; the average N_s are about 1500 for Blacks and 1700 for Whites. Pairwise deletion of missing values was used for the multiple regression analyses.

*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-7. (cont.) CURRENT GRADES AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
3. Living with mother only	.02	.02	-.06*	-.03
4. Living with father only	-.03	.01	-.08**	-.02
5. Living with parent substitute(s)	.03	.03	-.01	-.01
6. Family concern about student education and occupation	.03	.02	.12***	.02
7. Family concern with schoolwork	-.01	-.07	.05	-.04
C. Student's Characteristics				
1. Sex	.10***	.08*	.19***	.13***
2. I.Q.	.28***	.17***	.47***	.24***
3. Initial preference for other high school	-.09***	.01	-.05	-.00
4. Time spent helping family	.05	.03	-.00	-.01
5. Time spent on job	-.08	-.04	-.11***	-.08**
6. Unfriendly interaction with own race students	-.16	-.08*	-.16***	-.03
7. Satisfaction with life circumstances	.20	.18***	.29***	.16***
D. School Situation				
1. Being in Fine and Practical Arts program	.05	.12***	-.02	.09***
2. Being in Academic program	.27	.22***	.44***	.26***
3. Being in Vocational program	.02	.09**	-.04	.09***
4. Year in school	-.00	.04	.08**	.07**
5. Number of activities in which participated	.25	.18***	.44***	.13***
6. Evaluation of teachers	.26	.17***	.34***	.18***

APPENDIX A-7 . CURRENT GRADES AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS HOME AND
(cont.) PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
7. Perception of school strictness	$-.17^{***}$	$-.05$	$-.22^{***}$	$-.09^{***}$
8. Perceived administration responsiveness	$.12^{***}$	$-.00$	$.16^{***}$	$-.01$
9. Perception of academic status of Whites, relative to Blacks	$.15^{***}$	$.04$	$.16^{***}$	$.04$
10. Perception of favoritism toward Blacks in school	$-.14^{***}$	$-.07$	$-.21^{***}$	$-.02$
11. Perception of favoritism toward Whites in school	$-.15^{***}$	$-.01$	$-.18^{***}$	$-.07$
Multiple Correlation (R)				
a) Variables A1-3, plus all B,C,D	$R=.52^{***}(R^2 = .27)$		$R=.67^{***}(R^2 = .45)$	
b) Variables A4-7, plus all B,C,D	$R=.51^{***}(R^2 = .26)$		$R=.67^{***}(R^2 = .44)$	

APPENDIX A-8 . CURRENT GRADES, AS RELATED TO STUDENTS' ATTITUDES, GOALS, BELIEFS, EXPECTATIONS AND ASPIRATIONS[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
1. Prestige level of occupational aspiration	.12	.07*	.33***	.24***
2. Clarity of occupational plans	.03	-.02	-.03	-.10
3. Perceived chance to fulfill occupational aspiration	.07*	.03	.14***	.09**
4. Perceived chance to fulfill educational aspiration	.17***	.12***	.28***	.19***
5. Belief that anyone trying hard can get ahead	.02	-.03	.03	-.01
6. Importance of academic goals	.26***	.22***	.35***	.22***
7. Interest in classes	.16***	.11***	.21***	.13***
Multiple Correlation (R)	.32*** (R^2=.10)		.50*** (R^2=.25)	

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[a] N_s for correlations vary somewhat, depending on the number having valid scores on the particular variables; the average N_s are about 1650 for Blacks and about 1800 for Whites. Pairwise deletion of missing cases was used for the multiple regression.

*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-9. CUMULATIVE GRADES, AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS' HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
A. Inter-racial Contacts				
1. Inter-racial contact outside this high school	-.04	$-.10^{**}$	$-.06^{*}$	$-.05^{*}$
2. Opportunity for inter-racial contact in class	.00	-.02	$-.08^{**}$	-.01
3. Opportunity for inter-racial contact outside class	.02	.03	.02	-.01
4. Amount of friendly inter-racial contact outside this high school	-.02	$-.09^{**}$	.01	-.02
5. Avoidance of other-race students	$-.17^{***}$	-.06	$-.11^{***}$	.02
6. Friendly contact with other-race students	$.06^{*}$	.03	$.08^{**}$	-.01
7. Unfriendly contact with other-race students	$-.19^{***}$	-.06	$-.17^{***}$	-.05
B. Students' Home Background				
1. Parent's Education	.05	-.04	$.31^{***}$	$.06^{*}$
2. Number of children in family	$-.10^{***}$	-.01	$-.16^{***}$	-.03
3. Living with mother only	.03	.02	$-.06^{*}$	-.03
4. Living with father only	-.04	.00	$-.07^{*}$	-.01
5. Living with parent substitute(s)	.00	.00	-.01	.00

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[a] Two regression analyses were run. The first analysis included variables A1 through A3 (opportunities for inter-racial contact) plus all variables in sets B,C, and D. The second analysis included variables A4 through A7 (inter-racial interaction) plus all variables in sets B,C, and D. The partial Beta coefficients shown for variables in sets B,C, and D are those from the second regression analysis. N_s for correlations vary somewhat, depending on the number having valid scores on the particular variables; the average N_s are about 1500 for Blacks and 1700 for Whites. Pairwise deletion of missing values was used for the multiple regression analyses.

*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-9. CUMULATIVE GRADES, AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS' HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a]
(cont.)

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
6. Family concern about student's education and occupation	.03	-.01	.08**	-.01
7. Family concern with schoolwork	.02	-.01	.06*	-.02
C. Students' Characteristics				
1. Sex	.12***	.09**	.24***	.18***
2. I.Q.	.37***	.24***	.53***	.29***
3. Initial preference for present high school	-.08**	.00	-.02	.03
4. Time spent helping family	.05	.03	.00	.00
5. Time spent on job	-.10***	-.04	-.11***	-.04
6. Unfriendly interaction with own-race students	- 12***	-.03	-.16***	-.02
7. Satisfaction with life circumstances	.12***	.09*	.26***	.13***
D. School Situation				
1. Being in Fine and Practical Arts program	.07*	.13***	-.03	.09***
2. Being in Academic Program	.33***	.24***	.51***	.31***
3. Being in Vocational Program	-.01	.05	-.05	.09***
4. Year in school	-.06*	-.03	.04	.02
5. Evaluation of teachers	.23***	.16***	.33***	.15***
6. Number of activites in which participated	.26***	.20***	.42***	.13***
7. Perception of school strictness	-.17***	-.07*	-.21***	-.07***
8. Perceived administration responsiveness	.14***	.04	.22***	.06*
9. Perception of academic status of Whites, relative to Blacks	.15***	.01	.20***	.07**
10. Perception of favoritism toward Blacks in school	-.12***	-.10*	-.23***	.05
11. Perception of favoritism toward Whites in school	-.10***	.10	-.21***	-.13***

APPENDIX A-9 . CUMULATIVE GRADES, AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS' HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a]
(cont.)

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
Multiple Correlation (R)				
a) Variables Al-3 plus all B,C,D,	R = .55***		R = .73***	
b) Variables A4-7, plus all B,C,D	R = .54***		R = .72***	

APPENDIX A-10. CUMULATIVE GRADES, AS RELATED TO STUDENTS' GOALS, BELIEFS AND INTERESTS[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
1. Prestige level of occupational aspiration	.12***	.08*	.30***	.21***
2. Clarity of occupational plans	-.01	-.05	-.07*	-.13***
3. Perceived chance to fulfill occupational aspiration	.07*	.04	.13***	.09**
4. Perceived chance to fulfill educational aspiration	.16***	.13***	.27***	.18***
5. Belief that anyone trying hard can get ahead	.00	-.04	.02	-.02
6. Importance of academic goals	.20***	.17***	.34***	.23***
7. Interest in classes	.13***	.08*	.17***	.09***
Multiple Correlation (R)	.28*** (R^2=.08)		.48*** (R^2=.23)	

---

[a] N_s for correlations vary somewhat, depending on the number having valid scores on the particular variables; the average N_s are about 1600 for Blacks and about 1700 for Whites. Pairwise deletion of missing cases was used for the multiple regression.

*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-11. EDUCATIONAL ASPIRATIONS, AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
A. Inter-racial Contacts				
1. Inter-racial contact outside this high school	.10***	.01	-.01	-.02
2. Opportunity for inter-racial contact in class	.03	.01	-.05	.03
3. Opportunity for inter-racial contact outside class	.04	.00	.05	.02
4. Amount of friendly inter-racial contact outside this high school	.13***	.06	.07*	.02
5. Avoidance of other-race students	-.07*	-.02	-.06*	-.04
6. Friendly contact with other-race students	.15***	.03	.14***	.03
7. Unfriendly contact with other-race students	-.06*	.01	-.02	.02
B. Student's Home Background				
1. Parents' Education	.17***	.06	.37***	.11***
2. Number of children in family	-.11***	-.03	-.17***	-.06*
3. Living with mother only	.01	.02	-.05	-.01

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[a] Two regression analyses were run. The first analysis included variables A1 through A3 (opportunities for inter-racial contact) plus all variables in sets B,C, and D. The second analysis included variables A4 through A7 (inter-racial interaction) plus all variables in sets B,C, and D. The partial Beta coefficients shown for variables in sets B,C, and D are those from the second regression analysis. N_s for correlations vary somewhat, depending on the number having valid scores on the particular variables; the average N_s are about 1500 for Blacks and 1700 for Whites. Pairwise deletion of missing values was used for the multiple regression analyses.

*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-11. EDUCATIONAL ASPIRATIONS AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS
(cont.) HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
4. Living with father only	-.04	.00	-.05	-.01
5. Living with parent substitute(s)	.02	.03	-.05	-.03
6. Family concern about students education and occupation	.20***	.13***	.27***	.17***
7. Family concern with schoolwork	.12***	.00	.13***	-.02
C. Students' Characteristics				
1. Sex	-.05	-.06	-.08**	-.09***
2. I.Q.	.26***	.11**	.47***	.14***
3. Initial preference for present high school	-.05	.01	-.08***	-.04
4. Time spent helping family	.05	.02	-.01	.03
5. Time spent on job	.01	.00	.04	.02
6. Unfriendly interaction with own-race students	-.05	-.04	.01	.00
7. Satisfaction with life circumstances	.09***	.04	.12***	.03
D. School Situation				
1. Being in Fine and Practical Arts program	.04	.13***	-.04	.11***
2. Being in Academic program	.33***	.30***	.55***	.41***
3. Being in Vocational program	-.04	.04	-.13***	.00
4. Year in school	.06*	.07*	.11***	.03
5. Evaluation of teachers	.10***	.04	.15***	.07*
6. Number of activities in which participated	.32***	.18***	.44***	.14***
7. Perception of school strictness	-.08**	-.03	-.14***	-.05*

APPENDIX A-11. EDUCATIONAL ASPIRATIONS AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[a] (cont.)

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
8. Perceived administration responsiveness	.06*	-.02	.06*	-.04
9. Perception of academic status of Whites, relative to Blacks	.10	.00	.16***	.03
10. Perception of favoritism toward Blacks in school	-.09***	-.02	-.16***	-.03
11. Perception of favoritism toward Whites in school	-.08**	.01	-.12***	.01
Multiple Correlation (R)				
a) Variables A1-3, plus all B,C,D	R = .47***		R = .66***	
b) Variables A4-7, plus all B,C,D	R = .45***		R = .65***	

APPENDIX A-12. EDUCATIONAL ASPIRATIONS, AS RELATED TO STUDENTS' GOALS, BELIEFS, AND INTERESTS[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
1. Clarity of occupational plans	.09***	.08*	.03	.01
2. Perceived chance to fulfill occupational aspiration	.06*	.04	.03	.00
3. Perceived chance to fulfill educational aspiration	.06*	.03	.09***	.08**
4. Belief that anyone trying hard can get ahead	-.01	-.04	.01	-.01
5. Interest in classes	.13***	.13***	.12***	.11***
Multiple Correlation (R)	.17*** (R^2=.03)		.15*** (R^2=.02)	

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[a] N_s for correlations vary somewhat, depending on the number having valid scores on the particular variables; the average N_s are about 1600 for Blacks and about 1750 for Whites. Pairwise deletion of missing cases was used for the multiple regression.

*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-13. PRESTIGE LEVEL OF OCCUPATION[a] STUDENTS WOULD LIKE TO ENTER, AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS' HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[b]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
A. Inter-racial Contacts				
1. Inter-racial contact outside this high school	.05	.01	.02	.03
2. Opportunity for inter-racial contact in class	.05	.06	-.07*	-.03
3. Opportunity for inter-racial contact outside class	.01	-.02	.03	.02
4. Amount of friendly inter-racial contact outside this high school	.10***	.08	.08**	.08*
5. Avoidance of other-race students	-.03	.00	-.05	.03
6. Friendly contact with other-race students	.05	-.04	.10***	-.01
7. Unfriendly contact with other-race students	-.05	-.01	-.08**	-.07*

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[a] High score for prestige level indicates high prestige (direction of original scale reversed).

[b] Two regression analyses were run. The first analysis included variables A1 through A3 (opportunities for inter-racial contact) plus all variables in sets B,C, and D. The second analysis included variables A4 through A7 (inter-racial interaction) plus all variables in sets B,C, and D. The partial Beta coefficients shown for variables in sets B,C, and D are those from the second regression analysis.

N_s for correlations vary somewhat, depending on the number having valid scores on the particular variables. The average N_s are about 1500 for Blacks and 1600 for Whites. Pairwise deletion of missing values was used for the multiple regression analyses.

*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-13. (cont.) PRESTIGE LEVEL OF OCCUPATION[a] STUDENTS WOULD LIKE TO ENTER, AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS' HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[b]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
B. Student's Home Background				
1. Parent's Education	.09***	.05	.24***	.05
2. Number of children in family	-.05	.00	-.12***	-.06*
3. Living with mother only	.01	.02	-.05	-.03
4. Living with father only	-.01	.01	-.04	-.02
5. Living with parent substitute(s)	.03	.04	-.04	.04
6. Family concern about students education and occupation	.04	.01	.14***	.06
7. Family concern with schoolwork	.01	-.02	.08**	.00
C. Students' Characteristics				
1. Sex	-.01	.00	.01	-.02
2. I.Q.	.12***	.03	.33***	.10**
3. Initial preference for present high school	-.07*	-.03	-.01	.03
4. Time spent helping family	-.02	-.03	-.01	.01
5. Time spent on job	.04	.03	-.03	-.03
6. Unfriendly interaction with own race students	.00	.02	-.04	-.01
7. Satisfaction with life circumstances	.07*	.06	.05	-.02
D. School Situation				
1. Being in Fine and Practical Arts program	-.03	.03	-.05	.07*
2. Being in academic program	.23***	.23***	.43***	.35***

APPENDIX A-13. (cont.) PRESTIGE LEVEL OF OCCUPATION[a] STUDENTS WOULD LIKE TO ENTER, AS RELATED TO INTER-RACIAL INTERACTION, STUDENTS' HOME AND PERSONAL CHARACTERISTICS, AND ASPECTS OF THE SCHOOL SITUATION[b]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
3. Being in vocational program	-.06*	-.01	-.14***	-.04
4. Year in school	.07*	.08*	.07*	.03
5. Evaluation of teachers	.06*	.03	.11***	.04
6. Number of activities in which participated	.15***	.04	.32***	.10**
7. Perception of school strictness	-.04	.02	-.11***	-.04
8. Perceived administration responsiveness	.00	-.06	.06*	-.02
9. Perception of academic status of Whites, relative to Blacks	.05	.00	.11***	.01
10. Perception of favoritism toward Blacks in school	-.08**	-.01	-.09***	.02
11. Perception of favoritism toward Whites in school	-.08**	-.03	-.07*	.01
Multiple Correlation				
a) Variables A1-3, plus all B,C,D	R=.29***(R^2 = .08)		R=.48***(R^2 = .23)	
b) Variables A4-7, plus all B,C,D	R=.29***(R^2 = .08)		R=.48***(R^2 = .23)	

APPENDIX A-14. PRESTIGE LEVEL OF OCCUPATION STUDENTS WOULD LIKE TO ENTER, AS **RELATED** TO STUDENTS' **GOALS, BELIEFS, AND** INTERESTS[a]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
1. Clarity of occupational plans	$.07^{*}$	.06	-.03	-.03
2. Perceived chance to fulfill occupational aspiration	.00	-.03	$-.08^{**}$	$-.14^{***}$
3. Perceived chance to fulfill educational aspiration	.05	.03	$.09^{***}$	$.09^{**}$
4. Belief that anyone trying hard can get ahead	-.01	-.04	.00	-.04
5. Importance of academic goals	$.16^{***}$	$.15^{***}$	$.31^{***}$	$.35^{***}$
6. Interest in classes	$.10^{***}$	$.08^{*}$	$.06^{*}$	-.01
Multiple Correlation (R)	$.20^{***}$ (R^2=.04)		$.35^{***}$ (R^2=.12)	

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[a] N_s for correlations vary somewhat, depending on the number having valid scores on the particular variables; the average N_s are about 1400 for Blacks and about 1500 for Whites. Pairwise deletion of missing cases was used for the multiple regression.

*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-15. CHANGE IN OPINION[a] ABOUT OTHER-RACE PEOPLE, AS RELATED TO OPPORTUNITY FOR INTER-RACIAL CONTACT, OBJECTIVE CONDITIONS OF CONTACT, SCHOOL POSITION AND SOME STUDENT CHARACTERISTICS[b]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
A. Opportunity for Inter-racial Contact				
1. In-class contact	.03	.06	.16***	.12**
2. Contact around school	.08**	.07	.11***	.08*
3. Contact with black faculty	.00	-.01	.06*	.01
4. Participation in school activities	.00	.00	.00	-.01
B. Objective Conditions of Inter-racial Contact				
1. Number of classes divided into cooperative inter-racial groups	.07*	.05	.07*	.03
2. Socio-economic status of student, relative to other-race schoolmates	-.03	-.03	-.06*	-.03
3. Grade average of student, relative to other-race schoolmates	.03	.03	-.07*	-.02
4. Ethnocentrism of same-race schoolmates	-.10***	-.06	-.12***	-.12***
5. Ethnocentrism of other-race schoolmates	.00	.00	-.01	.02

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[a] High score indicates change toward more positive opinion (scale reversed).

[b] N_s for correlations vary somewhat, the average being about 1600 for Blacks and about 1800 for Whites. Pairwise deletion of missing values was used for the multiple regression analysis.

[c] *Significant at .05 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-15. CHANGE IN OPINION[a] ABOUT OTHER-RACE PEOPLE, AS RELATED TO OPPORTUNITY FOR INTER-RACIAL CONTACT, OBJECTIVE CONDITIONS OF CONTACT, SCHOOL POSITION AND SOME STUDENT CHARACTERISTICS[b]
(cont.)

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
C. School Position				
1. Vocational program	.02	.01	.03	.01
2. Academic program	-.02	-.06	-.08**	-.04
3. Fine and practical arts program	-.00	-.02	.05	.04
4. Attending School 1	-.01	-.01	-	-
5. Attending School 2	-.03	-.05	-.01	-.02
6. Attending School 3	.05	-.00	.09***	.07
7. Attending School 4	-.09***	-.08	c	c
8. Attending School 5	-.05	-.04	-.15***	-.10*
9. Attending School 6	.02	-.02	-.14***	-.13**
10. Attending School 7	.01	.00	-.03	.03
11. Attending School 8	.00	-.01	-.01	.01
12. Attending School 9	.05	.00	.07*	.03
13. Attending School 10	.05	.05	.01	.03
14. Attending School 11	c	c	.09***	-.02
15. Year in school	-.05	-.04	.04	.00
D. Student Characteristics				
1. Preference for attending other high school	-.17***	-.16***	-.05	-.07
2. Sex	-.06*	-.05	.05	.07*
3. Positive opinion of other race prior to high school	.07*	.03	-.04	-.08*
4. Number of activities in which participated	.00	.00	.06*	.00
Multiple Correlation (R)	.26** (R^2=.07)		.32*** (R^2=.11)	

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[c] Opinion change for Blacks was about average at School 11 and opinion change for Whites was about average at School 4; these schools were used as standards against which other schools were compared. Also, the General program was used as a standard against which students from other programs were compared.

APPENDIX A-16. CHANGE IN OPINION ABOUT OTHER-RACE PEOPLE[a], AS RELATED TO INTER-RACIAL INTERACTION, PERCEPTION OF CONDITIONS OF CONTACT, SCHOOL POSITION, AND SOME STUDENT CHARACTERISTICS[b]

	Black Students		White Students	
	Correlation	Partial Beta	Correlation	Partial Beta
A. Inter-racial Interaction				
1. Friendly contact	.13***	.09*	.26***	.18***
2. Unfriendly contact	-.12***	-.08*	-.30***	-.21***
B. Perceived Conditions of Contact				
1. Relative income status of other race	.00	.01	.17***	.03
2. Favoritism toward Whites	-.12***	-.12	-.02	.05
3. Favoritism toward Blacks	.01	.17**	-.04	-.01
4. Positive attitudes of white teachers toward inter-racial contact	-	-	.09***	-.01
5. Positive attitudes of black teachers toward inter-racial contact	.11***	.09*	-	-
6. Other-race facilitation of reaching own goals	.16***	.09*	.30***	.10*
7. Relative power of Blacks in school	.10***	.01	-.18***	-.08*
8. Peer attitudes toward other race	.30***	.22***	.37***	.30***
9. Relative academic status of Whites in school	.00	-.03	-.13***	-.11**

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[a] High score indicates change toward more positive opinion (scale reversed).

[b] N_s for correlations vary somewhat, the average being about 1600 for Blacks and about 1800 for Whites. Pairwise deletion of missing values was used for the multiple regression analysis.

*Significant at .05 level; **significant at .01 level; ***significant at .001 level.

APPENDIX A-16. CHANGE IN OPINION ABOUT OTHER-RACE PEOPLE, AS RELATED TO INTER-RACIAL INTERACTION, PERCEPTION OF CONDITIONS OF CONTACT, SCHOOL POSITION, AND SOME STUDENT CHARACTERISTICS
(cont.)

	Black Students		White Students	
C. School Position	Correlation	Partial Beta	Correlation	Partial Beta
1. Vocational program	.02	.03	.03	.02
2. Academic program	-.02	-.03	$-.08^{**}$	-.04
3. Fine and practical arts program	.00	-.02	.05	.02
4. Attending School 1	-.01	.00	-	-
5. Attending School 2	-.03	.02	-.01	-.01
6. Attending School 3	.05	.05	$.09^{***}$	.07
7. Attending School 4	$-.09^{***}$	-.04	c	c
8. Attending School 5	-.05	-.00	$-.15^{***}$	-.04
9. Attending School 6	.02	.03	$-.14^{***}$	-.00
10. Attending School 7	.01	.03	.03	$.08^{*}$
11. Attending School 8	-.00	.03	-.01	.06
12. Attending School 9	.05	.01	$.07^{*}$	$.09^{*}$
13. Attending School 10	.05	.07	.01	$.10^{*}$
14. Attending School 11	c	c	$.09^{***}$	.06
15. Year in school	-.05	-.03	.04	-.05
D. Student Characteristics				
1. Preference for attending other high school	$-.17^{***}$	$-.13^{***}$	-.05	-.02
2. Sex (high score=female)	$-.06^{*}$	-.06	.05	-.02
3. Positive opinion of other race prior to high school	$.07^{*}$	$-.08^{*}$	-.04	$-.25^{***}$
Multiple Correlation (R)	$.40^{***}$ (R^2=.16)		$.57^{***}$ (R^2=.33)	

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[c] Opinion change for Blacks was about average at School 11 and opinion change for Whites was about average at School 4. These schools were used as standard against which other schools were compared. The General Program was also used as a standard against which students in other programs were compared.

APPENDIX B. MEASURES OF SOME VARIABLES USED IN PREDICTION OF OUTCOMES FOR INDIVIDUAL STUDENTS

An indication of the questionnaire items which compose various measures used in this study is given in Appendix B of an earlier report (Patchen and Davidson, with Hofmann and Brown, 1973). The present appendix provides information about measures referred to in this report which are not included in the previous listing.

For each measure listed below, the questionnaire items from which scores are derived* and method of combining scores are indicated. Items are identified by the IBM card and column numbers which appear in the margin of the questions. For questionnaire items, see Appendix A of the earlier report.

A. Student's Home Background

1. Number of children in family	11:54-55
2. Adults with whom student lives	10:59-11:19
3. Family concern about student education and occupation	11:65 + 11:66
4. Family concern with students' school work	11:61 + 11:64

B. Student Characteristics

1. Time spent helping family	11:56
2. Time spent on job	11:57-58

C. School Situation

1. Evaluation of teachers	2:15-2:27

D. Aspirations and Relevant Beliefs and Perceptions

1. Occupational aspiration	4:64
2. Clarity of occupational plans	4:63
3. Perceived chance to fulfill occupational aspirations	4:66
4. Perceived chance to reach educational aspiration	4:61
5. Belief that anyone trying hard can get ahead	9:57

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*Many scores have been recoded so that the meaning of high scores on an index cannot necessarily be inferred from the codes on the questionnaire. Also, scores on some items have been recoded to provide same range as scores on other items.

APPENDIX B. (cont.) MEASURES OF SOME VARIABLES USED IN PREDICTION OF OUTCOMES FOR INDIVIDUAL STUDENTS

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6. Interest in classes 2:24 + 2:35

E. Net Effort Toward Academic Goals

1. 2:36 was recoded as follows: 1=210; 2=420; 3=840; 4=1260; 5=1680; 6=2520.
(Recoding of 2:36 reflects estimated number of hours devoted to homework during semester).
2. 2:44, 2:45, 2:46, 2:47, 2:48 were recoded as follows: 1=56; 2=42; 3=21; 4=7; 5=4; 6=2; 7=0.
(Recoding of items 2:44 through 2:48 reflects the number of times during the semester that each of the occurrences was repeated).
3. Index = [2:44 + 5(2:46 + 2:47) + 10(2:48) + 50(2:45) - 2:36]
[Weighting of items from 2:44 through 2:48 reflects the relative amounts of time taken away from academic effort as a result of each of the occurrences (1 hour=10).]

APPENDIX C. APPROXIMATE SAMPLING ERRORS OF DIFFERENCES BETWEEN SUBGROUPS

Sampling Errors of Differences
(Expressed as percentages)

Size of sample or group	1,000	700	500	400	300	200	100
For percentages from about 35 percent to 65 percent							
1,000	5.4	5.9	6.6	7.1	7.9	9.4	12.5
700		6.4	7.1	7.6	8.3	9.5	13.0
500			7.6	8.1	8.7	10.2	13.0
400				8.5	9.3	10.4	13.1
300					9.6	11.1	13.5
200						12.0	14.5
100							17.0
For percentages around 20 percent and 80 percent							
1,000	4.3	4.7	5.3	5.7	6.4	7.5	10.2
700		5.2	5.7	6.0	6.6	7.7	10.3
500			6.1	6.5	7.0	8.1	10.4
400				6.8	7.4	8.3	10.9
300					7.8	8.6	11.1
200						9.8	11.9
100							14.0
For percentages around 10 percent and 90 percent							
1,000	3.3	3.4	4.0	4.3	4.8	5.6	
700		3.9	4.2	4.6	5.0	5.8	
500			4.6	4.8	5.3	6.0	
400				5.1	5.6	6.3	
300					5.9	6.6	
200						7.1	
For percentages around 5 percent and 95 percent							
1,000	2.3	2.6	2.9	3.3	3.5	4.0	
700		2.8	3.3	3.3	3.7	4.2	
500			3.4	3.5	3.9	4.4	
400				3.7	4.0	4.4	
300					4.3	4.8	

Note: To illustrate the use of this table, consider the case where the size of the white sample is about 1,000, the size of the black sample is about 1,000 and the percentages for each group are in the range of 35 to 65 percent. The entry in the table for this case is 5.4. It indicates that a difference of 5.4 percent or greater, in favor of either group, could occur by chance in less than 5 cases out of 100. Thus, a difference of this size or larger is probably real and not the result of sampling error.

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